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65 70 75
His Ala Trp Ala Gln Leu Thr Phe Trp Glu Ala Ser Gln Leu Tyr
80 85 90
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35 40 45
Ala Arg Thr Phe Asp Lys Lys Gly Phe His Val Ile Ala Ala Cys
50 55 60
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65 70 75
Arg Leu Arg Thr Val Leu Leu Asp Val Thr Asp Pro Glu Asn Val
80 85 90
Lys Arg Thr Ala Gln Trp Val Lys Asn Gln Val Gly Glu Lys Gly
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Leu Val Lys Lys Ala Gln Gly Arg Val Ile Asn Val Ser Ser Val
155 160 165
Gly Gly Arg Leu Ala Ile Val Gly Gly Gly Tyr Thr Pro Ser Lys
170 175 180
Tyr Ala Val Glu Gly Phe Asn Asp Ser Leu Arg Arg Asp Met Lys
185 190 195

Ala Phe Gly Val His Val Ser Cys Ile Glu Pro Gly Leu Phe Lys
200 205 210
Thr Asn Leu Ala Asp Pro Val Lys Val Ile Glu Lys Lys Leu Ala
215 220 225
Ile Trp Glu Gln Leu Ser Pro Asp Ile Lys Gln Gln Tyr Gly Glu
230 235 240
Gly Tyr Ile Glu Lys Ser Leu Asp Lys Leu Lys Gly Asn Lys Ser
245 250 255
Tyr Val Asn Met Asp Leu Ser Pro Val Val Glu Cys Met Asp His
260 265 270
Ala Leu Thr Ser Leu Phe Pro Lys Thr His Tyr Ala Ala Gly Lys
275 280 285
Asp Ala Lys Ile Phe Trp Ile Pro Leu Ser His Met Pro Ala Ala
290 295 300
Leu Gln Asp Phe Leu Leu Leu Lys Gln Lys Ala Glu Leu Ala Asn
305 310 315
Pro Lys Ala Val

<210> 11
<211> 2720
<212> DNA
<213> Homo sapiens

<400> 11
gcgggctggt gacggcgctg cgatggctgc ctgcgagggc aggagaagcg 50
gagctctcgg ttcctctcag tcggacttcc tgacgccgcc agtgggcggg 100
gccccttggg ccgtcgccac cactgtagtc atgtaccac cgccgccgcc 150
gccgcctcat cgggacttca tctcgggtgac gctgagcttt ggcgagagct 200
atgacaacag caagagttgg cggcggcgct cgtgctggag gaaatggaag 250
caactgtcga gattgcagcg gaatatgatt ctcttctctc ttgcctttct 300
gcttttctgt ggactcctct tctacatcaa cttggctgac cattggaaag 350
ctctggcttt caggctagag gaagagcaga agatgaggcc agaaattgct 400
gggttaaaac cagcaaattc acccgtctta ccagctctc agaaggcgga 450
caccgaccct gagaacttac ctgagatttc gtcacagaag acacaaagac 500
acatccagcg gggaccacct cacctgcaga ttagaccccc aagccaagac 550
ctgaaggatg ggacccagga ggaggccaca aaaaggcaag aagcccctgt 600
ggatccccgc ccggaaggag atccgcagag gacagtcac agctggaggg 650

| | | | | | |
|------------|-------------|-------------|-------------|------------|------|
| gcctatctgg | accctcgccct | aggggtggatg | gctgctgggtg | tggggacttc | 2150 |
| gggtgggcag | aggcaccttg | ctgggtctgt | ggcattttcc | aagggccac | 2200 |
| gtagcaccgg | caaccgcaa | gtggcccagg | ctctgaactg | gctctgggct | 2250 |
| cctcctcgtc | tctgctttaa | tcaggacacc | gtgaggaca | gtgaggccgt | 2300 |
| cagtcttgg | gtgatgcggg | gtgggctggg | ccgctggagc | ctccgcctgc | 2350 |
| ttcctccaga | agacacgaat | catgactcac | gattgctgaa | gcctgagcag | 2400 |
| gtctctgtgg | gccgaccaga | ggggggcttc | gaggtggtcc | ctggtactgg | 2450 |
| ggtgaccgag | tggacagccc | aggggtgcagc | tctgcccggg | ctcgtgaagc | 2500 |
| ctcagatgtc | cccaatcaa | gggtctggag | gggctgccgt | gactccagag | 2550 |
| gcctgaggct | ccagggtctg | ctctggtgtt | tacaagctgg | actcagggat | 2600 |
| cctcctggcc | gccccgcagg | gggcttggag | ggctggacgg | caagtcgctc | 2650 |
| tagctcacgg | gcccctccag | tggaatgggt | cttttcggtg | gagataaaag | 2700 |
| ttgatttgct | ctaaccgcaa | 2720 | | | |

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<210> 12
<211> 699
<212> PRT
<213> Homo sapiens
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<220>
<221> TRANSMEM
<222> 21-40 and 84-105
<223> Transmembrane Domain (type II)
```

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<400> 12
Met  Ala  Ala  Cys  Glu  Gly  Arg  Arg  Ser  Gly  Ala  Leu  Gly  Ser  Ser
  1          5          10          15

Gln  Ser  Asp  Phe  Leu  Thr  Pro  Pro  Val  Gly  Gly  Ala  Pro  Trp  Ala
          20          25          30

Val  Ala  Thr  Thr  Val  Val  Met  Tyr  Pro  Pro  Pro  Pro  Pro  Pro  Pro
          35          40          45

His  Arg  Asp  Phe  Ile  Ser  Val  Thr  Leu  Ser  Phe  Gly  Glu  Ser  Tyr
          50          55          60

Asp  Asn  Ser  Lys  Ser  Trp  Arg  Arg  Arg  Ser  Cys  Trp  Arg  Lys  Trp
          65          70          75

Lys  Gln  Leu  Ser  Arg  Leu  Gln  Arg  Asn  Met  Ile  Leu  Phe  Leu  Leu
          80          85          90

Ala  Phe  Leu  Leu  Phe  Cys  Gly  Leu  Leu  Phe  Tyr  Ile  Asn  Leu  Ala
          95          100          105

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| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Asp His Trp Lys | Ala Leu Ala Phe Arg | Leu Glu Glu Glu Gln Lys | 110 | 115 | 120 |
| Met Arg Pro Glu | Ile Ala Gly Leu Lys | Pro Ala Asn Pro Pro Val | 125 | 130 | 135 |
| Leu Pro Ala Pro | Gln Lys Ala Asp Thr | Asp Pro Glu Asn Leu Pro | 140 | 145 | 150 |
| Glu Ile Ser Ser | Gln Lys Thr Gln Arg | His Ile Gln Arg Gly Pro | 155 | 160 | 165 |
| Pro His Leu Gln | Ile Arg Pro Pro Ser | Gln Asp Leu Lys Asp Gly | 170 | 175 | 180 |
| Thr Gln Glu Glu | Ala Thr Lys Arg Gln | Glu Ala Pro Val Asp Pro | 185 | 190 | 195 |
| Arg Pro Glu Gly | Asp Pro Gln Arg Thr | Val Ile Ser Trp Arg Gly | 200 | 205 | 210 |
| Ala Val Ile Glu | Pro Glu Gln Gly Thr | Glu Leu Pro Ser Arg Arg | 215 | 220 | 225 |
| Ala Glu Val Pro | Thr Lys Pro Pro Leu | Pro Pro Ala Arg Thr Gln | 230 | 235 | 240 |
| Gly Thr Pro Val | His Leu Asn Tyr Arg | Gln Lys Gly Val Ile Asp | 245 | 250 | 255 |
| Val Phe Leu His | Ala Trp Lys Gly Tyr | Arg Lys Phe Ala Trp Gly | 260 | 265 | 270 |
| His Asp Glu Leu | Lys Pro Val Ser Arg | Ser Phe Ser Glu Trp Phe | 275 | 280 | 285 |
| Gly Leu Gly Leu | Thr Leu Ile Asp Ala | Leu Asp Thr Met Trp Ile | 290 | 295 | 300 |
| Leu Gly Leu Arg | Lys Glu Phe Glu Glu | Ala Arg Lys Trp Val Ser | 305 | 310 | 315 |
| Lys Lys Leu His | Phe Glu Lys Asp Val | Asp Val Asn Leu Phe Glu | 320 | 325 | 330 |
| Ser Thr Ile Arg | Ile Leu Gly Gly Leu | Leu Ser Ala Tyr His Leu | 335 | 340 | 345 |
| Ser Gly Asp Ser | Leu Phe Leu Arg Lys | Ala Glu Asp Phe Gly Asn | 350 | 355 | 360 |
| Arg Leu Met Pro | Ala Phe Arg Thr Pro | Ser Lys Ile Pro Tyr Ser | 365 | 370 | 375 |
| Asp Val Asn Ile | Gly Thr Gly Val Ala | His Pro Pro Arg Trp Thr | 380 | 385 | 390 |
| Ser Asp Ser Thr | Val Ala Glu Val Thr | Ser Ile Gln Leu Glu Phe | | | |

| 395 | | | | | 400 | | | | | 405 | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Glu | Leu | Ser | 410 | Arg | Leu | Thr | Gly | Asp | Lys | Lys | Phe | Gln | Glu | Ala | 415 | 420 |
| Val | Glu | Lys | Val | 425 | Thr | Gln | His | Ile | His | Gly | Leu | Ser | Gly | Lys | Lys | 430 | 435 |
| Asp | Gly | Leu | Val | 440 | Pro | Met | Phe | Ile | Asn | Thr | His | Ser | Gly | Leu | Phe | 445 | 450 |
| Thr | His | Leu | Gly | 455 | Val | Phe | Thr | Leu | Gly | Ala | Arg | Ala | Asp | Ser | Tyr | 460 | 465 |
| Tyr | Glu | Tyr | Leu | 470 | Leu | Lys | Gln | Trp | Ile | Gln | Gly | Gly | Lys | Gln | Glu | 475 | 480 |
| Thr | Gln | Leu | Leu | 485 | Glu | Asp | Tyr | Val | Glu | Ala | Ile | Glu | Gly | Val | Arg | 490 | 495 |
| Thr | His | Leu | Leu | 500 | Arg | His | Ser | Glu | Pro | Ser | Lys | Leu | Thr | Phe | Val | 505 | 510 |
| Gly | Glu | Leu | Ala | 515 | His | Gly | Arg | Phe | Ser | Ala | Lys | Met | Asp | His | Leu | 520 | 525 |
| Val | Cys | Phe | Leu | 530 | Pro | Gly | Thr | Leu | Ala | Leu | Gly | Val | Tyr | His | Gly | 535 | 540 |
| Leu | Pro | Ala | Ser | 545 | His | Met | Glu | Leu | Ala | Gln | Glu | Leu | Met | Glu | Thr | 550 | 555 |
| Cys | Tyr | Gln | Met | 560 | Asn | Arg | Gln | Met | Glu | Thr | Gly | Leu | Ser | Pro | Glu | 565 | 570 |
| Ile | Val | His | Phe | 575 | Asn | Leu | Tyr | Pro | Gln | Pro | Gly | Arg | Arg | Asp | Val | 580 | 585 |
| Glu | Val | Lys | Pro | 590 | Ala | Asp | Arg | His | Asn | Leu | Leu | Arg | Pro | Glu | Thr | 595 | 600 |
| Val | Glu | Ser | Leu | 605 | Phe | Tyr | Leu | Tyr | Arg | Val | Thr | Gly | Asp | Arg | Lys | 610 | 615 |
| Tyr | Gln | Asp | Trp | 620 | Gly | Trp | Glu | Ile | Leu | Gln | Ser | Phe | Ser | Arg | Phe | 625 | 630 |
| Thr | Arg | Val | Pro | 635 | Ser | Gly | Gly | Tyr | Ser | Ser | Ile | Asn | Asn | Val | Gln | 640 | 645 |
| Asp | Pro | Gln | Lys | 650 | Pro | Glu | Pro | Arg | Asp | Lys | Met | Glu | Ser | Phe | Phe | 655 | 660 |
| Leu | Gly | Glu | Thr | 665 | Leu | Lys | Tyr | Leu | Phe | Leu | Leu | Phe | Ser | Asp | Asp | 670 | 675 |
| Pro | Asn | Leu | Leu | 680 | Ser | Leu | Asp | Ala | Tyr | Val | Phe | Asn | Thr | Glu | Ala | 685 | 690 |

His Pro Leu Pro Ile Trp Thr Pro Ala
695

<210> 13
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 13
cgccagaagg gcgtgattga cgtc 24

<210> 14
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 14
ccatccttct tcccagacag gccg 24

<210> 15
<211> 44
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-44
<223> Synthetic construct.

<400> 15
gaagcctgtg tccaggtcct tcagtgagtg gtttggcctc ggtc 44

<210> 16
<211> 1524
<212> DNA
<213> Homo sapiens

<400> 16
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gcgcagctgc cctgggagga cggcaggtcc gggttgctct ccggcggcct 150
ccctcggaag tgttcogtct tccacctgtt cgtggcctgc ctctcgctgg 200
gcttcttctc cctactctgg ctgcagctca gctgctctgg ggacgtggcc 250

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cgggcagtca ggggacaagg gcaggagacc tcgggccctc cccgtgcctg 300
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cccaccgcct ggcagtgctg gtgcccttcc gcgaacgctt cgaggagctc 400
ctggtcttctg tgccccacat gcgccgcttc ctgagcagga agaagatccg 450
gcaccacatc tacgtgctca accagggtgga ccacttcagg ttcaaccggg 500
cagcgctcat caacgtgggc ttcttgga gaagcaacag cacggactac 550
attgccatgc acgacgttga cctgctccct ctcaacgagg agctggacta 600
tggttttctt gaggtggggc ccttccacgt ggctccccg gagctccacc 650
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cctactctga cctccttcac gtgccaggc ctgtgggtag tggggagggc 1450
tgaacaggac aacctctcat ccccccaaa aaaaaaaaaa aaaaaaaaaa 1500
aaaaaaaaaa aaaaaaaaaa aaaa 1524

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<210> 17
<211> 327
<212> PRT
<213> Homo sapiens
<220>

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<221> sig_peptide
<222> 1-42
<223> Signal peptide.

<220>
<221> misc_feature
<222> 19-25,65-71,247-253,285-291,303-310
<223> N-myristoylation site.

<220>
<221> misc_feature
<222> 27-31
<223> cAMP- and cGMP-dependent protein kinase phosphorylation site.

<220>
<221> TRANSMEM
<222> 29-49
<223> Transmembrane domain (type II).

<220>
<221> misc_feature
<222> 154-158
<223> N-glycosylation site.

<220>
<221> misc_feature
<222> 226-233
<223> Tyrosine kinase phosphorylation site.

<400> 17
Met Phe Pro Ser Arg Arg Lys Ala Ala Gln Leu Pro Trp Glu Asp
 1             5             10             15
Gly Arg Ser Gly Leu Leu Ser Gly Gly Leu Pro Arg Lys Cys Ser
          20             25             30
Val Phe His Leu Phe Val Ala Cys Leu Ser Leu Gly Phe Phe Ser
          35             40             45
Leu Leu Trp Leu Gln Leu Ser Cys Ser Gly Asp Val Ala Arg Ala
          50             55             60
Val Arg Gly Gln Gly Gln Glu Thr Ser Gly Pro Pro Arg Ala Cys
          65             70             75
Pro Pro Glu Pro Pro Pro Glu His Trp Glu Glu Asp Ala Ser Trp
          80             85             90
Gly Pro His Arg Leu Ala Val Leu Val Pro Phe Arg Glu Arg Phe
          95             100            105
Glu Glu Leu Leu Val Phe Val Pro His Met Arg Arg Phe Leu Ser
          110            115            120
Arg Lys Lys Ile Arg His His Ile Tyr Val Leu Asn Gln Val Asp
          125            130            135
His Phe Arg Phe Asn Arg Ala Ala Leu Ile Asn Val Gly Phe Leu

```


| | | | | | |
|---|-------------------------|--|-----|--|-----|
| | 140 | | 145 | | 150 |
| Glu Ser Ser Asn Ser Thr Asp Tyr Ile | Ala Met His Asp Val Asp | | | | |
| 155 | 160 | | | | 165 |
| Leu Leu Pro Leu Asn Glu Glu Leu Asp Tyr Gly Phe Pro Glu Ala | | | | | |
| 170 | 175 | | | | 180 |
| Gly Pro Phe His Val Ala Ser Pro Glu Leu His Pro Leu Tyr His | | | | | |
| 185 | 190 | | | | 195 |
| Tyr Lys Thr Tyr Val Gly Gly Ile Leu Leu Leu Ser Lys Gln His | | | | | |
| 200 | 205 | | | | 210 |
| Tyr Arg Leu Cys Asn Gly Met Ser Asn Arg Phe Trp Gly Trp Gly | | | | | |
| 215 | 220 | | | | 225 |
| Arg Glu Asp Asp Glu Phe Tyr Arg Arg Ile Lys Gly Ala Gly Leu | | | | | |
| 230 | 235 | | | | 240 |
| Gln Leu Phe Arg Pro Ser Gly Ile Thr Thr Gly Tyr Lys Thr Phe | | | | | |
| 245 | 250 | | | | 255 |
| Arg His Leu His Asp Pro Ala Trp Arg Lys Arg Asp Gln Lys Arg | | | | | |
| 260 | 265 | | | | 270 |
| Ile Ala Ala Gln Lys Gln Glu Gln Phe Lys Val Asp Arg Glu Gly | | | | | |
| 275 | 280 | | | | 285 |
| Gly Leu Asn Thr Val Lys Tyr His Val Ala Ser Arg Thr Ala Leu | | | | | |
| 290 | 295 | | | | 300 |
| Ser Val Gly Gly Ala Pro Cys Thr Val Leu Asn Ile Met Leu Asp | | | | | |
| 305 | 310 | | | | 315 |
| Cys Asp Lys Thr Ala Thr Pro Trp Cys Thr Phe Ser | | | | | |
| 320 | 325 | | | | |

<210> 18
 <211> 23
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-23
 <223> Synthetic construct.

<400> 18
 gcgaacgctt cgaggagtcc tgg 23

<210> 19
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence

<222> 1-24
<223> Synthetic construct

<400> 19
gcagtgcggg aagccacatg gtac 24

<210> 20
<211> 46
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-46
<223> Synthetic construct.

<400> 20
cttcctgagc aggaagaaga tccggcacca catctacgtg ctcaac 46

<210> 21
<211> 494
<212> DNA
<213> Homo sapiens

<400> 21
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gactggtcgg tgcccagaaa gtctcttctg ccactgacgc ccccatcagg 150
gattgggcct tctttccccc ttcctttctg tgtctcctgc ctcatcggcc 200
tgccatgacc tgcagccaag cccagccccg tggggaaggg gagaaagtgg 250
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ggctaggggg gctgccttat ttaaagtggg tgtttatgat tcttatacta 350
atttatacaa agatattaag gccctgttca ttaagaaatt gttcccttcc 400
cctgtgttca atgtttgtaa agattgttct gtgtaaatat gtctttataa 450
taaacagtta aaagctgaaa aaaaaaaaaa aaaaaaaaaa aaaa 494

<210> 22
<211> 73
<212> PRT
<213> Homo sapiens

<220>
<221> sig_peptide
<222> 1-15
<223> Signal peptide.

<220>
<221> misc_feature
<222> 3-18

<223> Growth factor and cytokines receptors family.

<400> 22

| | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Leu | Thr | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Lys | Gly |
| 1 | | | | 5 | | | | 10 | | | | | 15 |
| Ser | Cys | Leu | Glu | Trp | Gly | Leu | Val | Gly | Ala | Gln | Lys | Val | Ser |
| | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Thr | Asp | Ala | Pro | Ile | Arg | Asp | Trp | Ala | Phe | Phe | Pro | Ser |
| | | | 35 | | | | | 40 | | | | | 45 |
| Phe | Leu | Cys | Leu | Leu | Pro | His | Arg | Pro | Ala | Met | Thr | Cys | Gln |
| | | | 50 | | | | | 55 | | | | | 60 |
| Ala | Gln | Pro | Arg | Gly | Glu | Gly | Glu | Lys | Val | Gly | Asp | Gly | |
| | | | | 65 | | | | 70 | | | | | |

<210> 23

<211> 2883

<212> DNA

<213> Homo sapiens

<400> 23

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ccataaggct ccggtcgccg ctgggcccgc gccgcgctcc tgcccggccg 150
ggctccgggg cggcccgcta ggccagtgcg ccgccgctcg ccccgagggc 200
cccgccccgc agcatggagc cacccgagc ccggcggggc cgcgcgcagc 250
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<210> 24
<211> 616
<212> PRT
<213> Homo sapiens

<220>
<221> sig_peptide
<222> 1-33
<223> Signal peptide.

<220>
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<222> 13-40
<223> Transmembrane domain (type II).

<400> 24
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20 25 30
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35 40 45
Asp Gly Arg Pro Arg Gly Ala Gly Arg Ala Ala Gly Ala Ala Glu
50 55 60
Gly Lys Val Val Cys Ser Ser Leu Glu Leu Ala Gln Val Leu Pro
65 70 75
Pro Asp Thr Leu Pro Asn Arg Thr Val Thr Leu Ile Leu Ser Asn
80 85 90

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| Asn | Lys | Ile | Ser | Glu 95 | Leu | Lys | Asn | Gly | Ser 100 | Phe | Ser | Gly | Leu | Ser 105 |
| Leu | Leu | Glu | Arg | Leu 110 | Asp | Leu | Arg | Asn | Asn 115 | Leu | Ile | Ser | Ser | Ile 120 |
| Asp | Pro | Gly | Ala | Phe 125 | Trp | Gly | Leu | Ser | Ser 130 | Leu | Lys | Arg | Leu | Asp 135 |
| Leu | Thr | Asn | Asn | Arg 140 | Ile | Gly | Cys | Leu | Asn 145 | Ala | Asp | Ile | Phe | Arg 150 |
| Gly | Leu | Thr | Asn | Leu 155 | Val | Arg | Leu | Asn | Leu 160 | Ser | Gly | Asn | Leu | Phe 165 |
| Ser | Ser | Leu | Ser | Gln 170 | Gly | Thr | Phe | Asp | Tyr 175 | Leu | Ala | Ser | Leu | Arg 180 |
| Ser | Leu | Glu | Phe | Gln 185 | Thr | Glu | Tyr | Leu | Leu 190 | Cys | Asp | Cys | Asn | Ile 195 |
| Leu | Trp | Met | His | Arg 200 | Trp | Val | Lys | Glu | Lys 205 | Asn | Ile | Thr | Val | Arg 210 |
| Asp | Thr | Arg | Cys | Val 215 | Tyr | Pro | Lys | Ser | Leu 220 | Gln | Ala | Gln | Pro | Val 225 |
| Thr | Gly | Val | Lys | Gln 230 | Glu | Leu | Leu | Thr | Cys 235 | Asp | Pro | Pro | Leu | Glu 240 |
| Leu | Pro | Ser | Phe | Tyr 245 | Met | Thr | Pro | Ser | His 250 | Arg | Gln | Val | Val | Phe 255 |
| Glu | Gly | Asp | Ser | Leu 260 | Pro | Phe | Gln | Cys | Met 265 | Ala | Ser | Tyr | Ile | Asp 270 |
| Gln | Asp | Met | Gln | Val 275 | Leu | Trp | Tyr | Gln | Asp 280 | Gly | Arg | Ile | Val | Glu 285 |
| Thr | Asp | Glu | Ser | Gln 290 | Gly | Ile | Phe | Val | Glu 295 | Lys | Asn | Met | Ile | His 300 |
| Asn | Cys | Ser | Leu | Ile 305 | Ala | Ser | Ala | Leu | Thr 310 | Ile | Ser | Asn | Ile | Gln 315 |
| Ala | Gly | Ser | Thr | Gly 320 | Asn | Trp | Gly | Cys | His 325 | Val | Gln | Thr | Lys | Arg 330 |
| Gly | Asn | Asn | Thr | Arg 335 | Thr | Val | Asp | Ile | Val 340 | Val | Leu | Glu | Ser | Ser 345 |
| Ala | Gln | Tyr | Cys | Pro 350 | Pro | Glu | Arg | Val | Val 355 | Asn | Asn | Lys | Gly | Asp 360 |
| Phe | Arg | Trp | Pro | Arg 365 | Thr | Leu | Ala | Gly | Ile 370 | Thr | Ala | Tyr | Leu | Gln 375 |
| Cys | Thr | Arg | Asn | Thr | His | Gly | Ser | Gly | Ile | Tyr | Pro | Gly | Asn | Pro |

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|--|--|--|--|
| 380 | | | | | | | | | | 385 | | | | | 390 | | | | |
| Gln | Asp | Glu | Arg | Lys 395 | Ala | Trp | Arg | Arg | Cys 400 | Asp | Arg | Gly | Gly | Phe 405 | | | | | |
| Trp | Ala | Asp | Asp | Asp 410 | Tyr | Ser | Arg | Cys | Gln 415 | Tyr | Ala | Asn | Asp | Val 420 | | | | | |
| Thr | Arg | Val | Leu | Tyr 425 | Met | Phe | Asn | Gln | Met 430 | Pro | Leu | Asn | Leu | Thr 435 | | | | | |
| Asn | Ala | Val | Ala | Thr 440 | Ala | Arg | Gln | Leu | Leu 445 | Ala | Tyr | Thr | Val | Glu 450 | | | | | |
| Ala | Ala | Asn | Phe | Ser 455 | Asp | Lys | Met | Asp | Val 460 | Ile | Phe | Val | Ala | Glu 465 | | | | | |
| Met | Ile | Glu | Lys | Phe 470 | Gly | Arg | Phe | Thr | Lys 475 | Glu | Glu | Lys | Ser | Lys 480 | | | | | |
| Glu | Leu | Gly | Asp | Val 485 | Met | Val | Asp | Ile | Ala 490 | Ser | Asn | Ile | Met | Leu 495 | | | | | |
| Ala | Asp | Glu | Arg | Val 500 | Leu | Trp | Leu | Ala | Gln 505 | Arg | Glu | Ala | Lys | Ala 510 | | | | | |
| Cys | Ser | Arg | Ile | Val 515 | Gln | Cys | Leu | Gln | Arg 520 | Ile | Ala | Thr | Tyr | Arg 525 | | | | | |
| Leu | Ala | Gly | Gly | Ala 530 | His | Val | Tyr | Ser | Thr 535 | Tyr | Ser | Pro | Asn | Ile 540 | | | | | |
| Ala | Leu | Glu | Ala | Tyr 545 | Val | Ile | Lys | Ser | Thr 550 | Gly | Phe | Thr | Gly | Met 555 | | | | | |
| Thr | Cys | Thr | Val | Phe 560 | Gln | Lys | Val | Ala | Ala 565 | Ser | Asp | Arg | Thr | Gly 570 | | | | | |
| Leu | Ser | Asp | Tyr | Gly 575 | Arg | Arg | Asp | Pro | Glu 580 | Gly | Asn | Leu | Asp | Lys 585 | | | | | |
| Gln | Leu | Ser | Phe | Lys 590 | Cys | Asn | Val | Ser | Asn 595 | Thr | Phe | Ser | Ser | Leu 600 | | | | | |
| Ala | Leu | Lys | Val | Cys 605 | Tyr | Ile | Leu | Gln | Ser 610 | Phe | Lys | Thr | Ile | Tyr 615 | | | | | |

Ser

<210> 25

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct

<400> 25
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<210> 26
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 <212> DNA
 <213> Artificial

<220>
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 <222> 1-24
 <223> Synthetic construct.

<400> 26
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<210> 27
 <211> 50
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-50
 <223> Synthetic construct.

<400> 27
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<210> 28
 <211> 683
 <212> DNA
 <213> Homo sapiens

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 gcagaggctt cgtgacggag ttatcagaga cattgagagg caaattcgga 150
 aaaaagaaaa cattcgtctt ttgggagaac agattatctt gactgagcaa 200
 cttgaagcag aaagagagaa gatgttattg gcaaaaggat ctcaaaaatc 250
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 ctgctttcag ggtcccttat atctgaataa aggagtgtgg gcagacactt 450
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 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Ser Thr Cys Val Ala Phe Ser Leu Val Ala Ser Val Gly Ala Trp
 50 55 60
 Thr Gly Ser Met Gly Asn Trp Ser Met Phe Thr Trp Cys Phe Cys
 65 70 75
 Phe Ser Val Thr Leu Ile Ile Leu Ile Val Glu Leu Cys Gly Leu
 80 85 90
 Gln Ala Arg Phe Pro Leu Ser Trp Arg Asn Phe Pro Ile Thr Phe
 95 100 105
 Ala Cys Tyr Ala Ala Leu Phe Cys Leu Ser Ala Ser Ile Ile Tyr
 110 115 120
 Pro Thr Thr Tyr Val Gln Phe Leu Ser His Gly Arg Ser Arg Asp
 125 130 135
 His Ala Ile Ala Ala Thr Phe Phe Ser Cys Ile Ala Cys Val Ala
 140 145 150
 Tyr Ala Thr Glu Val Ala Trp Thr Arg Ala Arg Pro Gly Glu Ile
 155 160 165
 Thr Gly Tyr Met Ala Thr Val Pro Gly Leu Leu Lys Val Leu Glu
 170 175 180
 Thr Phe Val Ala Cys Ile Ile Phe Ala Phe Ile Ser Asp Pro Asn
 185 190 195
 Leu Tyr Gln His Gln Pro Ala Leu Glu Trp Cys Val Ala Val Tyr
 200 205 210

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 <212> PRT
 <213> Homo sapiens

<400> 33
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 35 40 45
 His Met Asp Pro Asn Tyr Cys His Pro Ser Thr Ser Leu His Leu
 50 55 60
 Cys Ser Leu Ala Trp Ser Phe Thr Arg Leu Leu His Pro Pro Leu
 65 70 75
 Ser Pro Gly Ile Ser Gln Val Val Lys Asp His Val Thr Lys Pro
 80 85 90
 Thr Ala Met Ala Gln Gly Arg Val Ala His Leu Ile Glu Trp Lys
 95 100 105
 Gly Trp Ser Lys Pro Ser Asp Ser Pro Ala Ala Leu Glu Ser Ala
 110 115 120
 Phe Ser Ser Tyr Ser Asp Leu Ser Glu Gly Glu Gln Glu Ala Arg
 125 130 135
 Phe Ala Ala Gly Val Ala Glu Gln Phe Ala Ile Ala Glu Ala Lys
 140 145 150
 Leu Arg Ala Trp Ser Ser Val Asp Gly Glu Asp Ser Thr Asp Asp
 155 160 165
 Ser Tyr Asp Glu Asp Phe Ala Gly Gly Met Asp Thr Asp Met Ala
 170 175 180
 Gly Gln Leu Pro Leu Gly Pro His Leu Gln Asp Leu Phe Thr Gly
 185 190 195
 His Arg Phe Ser Arg Pro Val Arg Gln Gly Ser Val Glu Pro Glu
 200 205 210
 Ser Asp Cys Ser Gln Thr Val Ser Pro Asp Thr Leu Cys Ser Ser
 215 220 225
 Leu Cys Ser Leu Glu Asp Gly Leu Leu Gly Ser Pro Ala Arg Leu
 230 235 240

Ala Ser Gln Leu Leu Gly Asp Glu Leu Leu Leu Ala Lys Leu Pro
 245 250 255

Pro Ser Arg Glu Ser Ala Phe Arg Ser Leu Gly Pro Leu Glu Ala
 260 265 270

Gln Asp Ser Leu Tyr Asn Ser Pro Leu Thr Glu Ser Cys Leu Ser
 275 280 285

Pro Ala Glu Glu Glu Pro Ala Pro Cys Lys Asp Cys Gln Pro Leu
 290 295 300

Cys Pro Pro Leu Thr Gly Ser Trp Glu Arg Gln Arg Gln Ala Ser
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Asp Leu Ala Ser Ser Gly Val Val Ser Leu Asp Glu Asp Glu Ala
 320 325 330

Glu Pro Glu Glu Gln
 335

<210> 34
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 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-25
 <223> Synthetic construct

<400> 34
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<210> 35
 <211> 50
 <212> DNA
 <213> Artificial

<220>
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 <222> 1-50
 <223> Synthetic construct.

<400> 35
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<210> 36
 <211> 25
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-25
 <223> Synthetic construct.

<400> 36

ttccactcaa tgaggtgagc cactc 25

<210> 37
 <211> 23
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-23
 <223> Synthetic construct.

<400> 37
 ggcgagccct aactatccag gag 23

<210> 38
 <211> 39
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-39
 <223> Synthetic construct.

<400> 38
 ggagatcgct ggcgtggcca ggtcctccct gcatggat 39

<210> 39
 <211> 22
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-22
 <223> Synthetic construct.

<400> 39
 ctgctgcaaa gcgagcctct tg 22

<210> 40
 <211> 2084
 <212> DNA
 <213> Homo sapiens

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<210> 41
<211> 334
<212> PRT
<213> Homo sapiens

<400> 41
Met Leu Ala Leu Ala Lys Ile Leu Leu Ile Ser Thr Leu Phe Tyr
1 5 10 15
Ser Leu Leu Ser Gly Ser His Gly Lys Glu Asn Gln Asp Ile Asn
20 25 30
Thr Thr Gln Asn Ile Ala Glu Val Phe Lys Thr Met Glu Asn Lys
35 40 45
Pro Ile Ser Leu Glu Ser Glu Ala Asn Leu Asn Ser Asp Lys Glu
50 55 60
Asn Ile Thr Thr Ser Asn Leu Lys Ala Ser His Ser Pro Pro Leu
65 70 75
Asn Leu Pro Asn Asn Ser His Gly Ile Thr Asp Phe Ser Ser Asn
80 85 90
Ser Ser Ala Glu His Ser Leu Gly Ser Leu Lys Pro Thr Ser Thr
95 100 105
Ile Ser Thr Ser Pro Pro Leu Ile His Ser Phe Val Ser Lys Val
110 115 120
Pro Trp Asn Ala Pro Ile Ala Asp Glu Asp Leu Leu Pro Ile Ser
125 130 135
Ala His Pro Asn Ala Thr Pro Ala Leu Ser Ser Glu Asn Phe Thr
140 145 150
Trp Ser Leu Val Asn Asp Thr Val Lys Thr Pro Asp Asn Ser Ser
155 160 165
Ile Thr Val Ser Ile Leu Ser Ser Glu Pro Thr Ser Pro Ser Val
170 175 180
Thr Pro Leu Ile Val Glu Pro Ser Gly Trp Leu Thr Thr Asn Ser
185 190 195

Asp Ser Phe Thr Gly Phe Thr Pro Tyr Gln Glu Lys Thr Thr Leu
200 205 210

Gln Pro Thr Leu Lys Phe Thr Asn Asn Ser Lys Leu Phe Pro Asn
215 220 225

Thr Ser Asp Pro Gln Lys Glu Asn Arg Asn Thr Gly Ile Val Phe
230 235 240

Gly Ala Ile Leu Gly Ala Ile Leu Gly Val Ser Leu Leu Thr Leu
245 250 255

Val Gly Tyr Leu Leu Cys Gly Lys Arg Lys Thr Asp Ser Phe Ser
260 265 270

His Arg Arg Leu Tyr Asp Asp Arg Asn Glu Pro Val Leu Arg Leu
275 280 285

Asp Asn Ala Pro Glu Pro Tyr Asp Val Ser Phe Gly Asn Ser Ser
290 295 300

Tyr Tyr Asn Pro Thr Leu Asn Asp Ser Ala Met Pro Glu Ser Glu
305 310 315

Glu Asn Ala Arg Asp Gly Ile Pro Met Asp Asp Ile Pro Pro Leu
320 325 330

Arg Thr Ser Val

<210> 42
<211> 1594
<212> DNA
<213> Homo sapiens

<400> 42
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cccctaccgc cgtgcaaaag gaggaggcgc ggcaagacgt ggaggccctc 150
ctgagccgca cggtcagaac tcagatactg accggcaagg agtcccgagt 200
tgccacccag gaaaaagagg gctcctctgg gagatgtatg cttactctct 250
taggcctttc attcatcttg gcaggactta ttgttggtgg agcctgcatt 300
tacaagtact tcatgcccaa gagcaccatt taccgtggag agatgtgctt 350
ttttgattct gaggatcctg caaattccct tcgtggagga gagcctaact 400
tctgcctgt gactgaggag gctgacattc gtgaggatga caacattgca 450
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tattcatgac ttgaaaagg gaatgactgc ttacctggac ttgttgctgg 550

<210> 43
<211> 263
<212> PRT
<213> Homo sapiens

<400> 43
Met Val Lys Ile Ala Phe Asn Thr Pro Thr Ala Val Gln Lys Glu
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Glu Ala Arg Gln Asp Val Glu Ala Leu Leu Ser Arg Thr Val Arg
20 25 30
Thr Gln Ile Leu Thr Gly Lys Glu Leu Arg Val Ala Thr Gln Glu
35 40 45
Lys Glu Gly Ser Ser Gly Arg Cys Met Leu Thr Leu Leu Gly Leu

| 50 | | | | | | | | | | 55 | | | | | 60 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Ser | Phe | Ile | Leu | Ala | Gly | Leu | Ile | Val | Gly | Gly | Ala | Cys | Ile | Tyr | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Lys | Tyr | Phe | Met | Pro | Lys | Ser | Thr | Ile | Tyr | Arg | Gly | Glu | Met | Cys | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Phe | Phe | Asp | Ser | Glu | Asp | Pro | Ala | Asn | Ser | Leu | Arg | Gly | Gly | Glu | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Pro | Asn | Phe | Leu | Pro | Val | Thr | Glu | Glu | Ala | Asp | Ile | Arg | Glu | Asp | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Asp | Asn | Ile | Ala | Ile | Ile | Asp | Val | Pro | Val | Pro | Ser | Phe | Ser | Asp | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Ser | Asp | Pro | Ala | Ala | Ile | Ile | His | Asp | Phe | Glu | Lys | Gly | Met | Thr | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Ala | Tyr | Leu | Asp | Leu | Leu | Leu | Gly | Asn | Cys | Tyr | Leu | Met | Pro | Leu | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Asn | Thr | Ser | Ile | Val | Met | Pro | Pro | Lys | Asn | Leu | Val | Glu | Leu | Phe | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Gly | Lys | Leu | Ala | Ser | Gly | Arg | Tyr | Leu | Pro | Gln | Thr | Tyr | Val | Val | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Arg | Glu | Asp | Leu | Val | Ala | Val | Glu | Glu | Ile | Arg | Asp | Val | Ser | Asn | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Leu | Gly | Ile | Phe | Ile | Tyr | Gln | Leu | Cys | Asn | Asn | Arg | Lys | Ser | Phe | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Arg | Leu | Arg | Arg | Arg | Asp | Leu | Leu | Leu | Gly | Phe | Asn | Lys | Arg | Ala | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Ile | Asp | Lys | Cys | Trp | Lys | Ile | Arg | His | Phe | Pro | Asn | Glu | Phe | Ile | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Val | Glu | Thr | Lys | Ile | Cys | Gln | Glu | | | | | | | | | | | | |
| | | | | 260 | | | | | | | | | | | | | | | |

<210> 44

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial sequence

<222> 1-24

<223> Synthetic construct.

<400> 44

gaaagacacg acacagcagc ttgc 24

<210> 45

<211> 20
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-20
 <223> Synthetic construct.

<400> 45
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<210> 46
 <211> 26
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-26
 <223> Synthetic construct.

<400> 46
 caggatctcc tcttcagtc tgcagc 26

<210> 47
 <211> 28
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-28
 <223> Synthetic construct.

<400> 47
 cttctcgaac cacataagtt tgaggcag 28

<210> 48
 <211> 25
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-25
 <223> Synthetic construct.

<400> 48
 cagattccc tccacagcaa ctggg 25

<210> 49
 <211> 1969
 <212> DNA
 <213> Homo sapiens

<400> 49
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 gtttcggcgg cagccccag cctcctcatc cttctgttgc tgctgctggg 200
 gtctgtgcct gctaccgacg cccgctctgt gccctgaag gccacgttcc 250
 tggaggatgt ggcgggtagt ggggaggccg agggctcgtc ggcctcctcc 300
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 ggctccctgg cttttctgct gatgttcacg gtctgtgccg cggtcatcac 500
 ccggcagaag cagaaggcct cggcctatta cccatcgtcc ttccccaaga 550
 agaagtacgt ggaccagagt gaccgggccg ggggccccg ggccttcagt 600
 gaggtccccg acagagcccc cgacagcagg cccgaggaag ccctggattc 650
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 ggcagggggc cagaggaaga ggagaaggc agccaggagg gggaccagga 800
 agtccaggga catgggtcc cagtggagac accagaggcg caggaggagc 850
 cgtgctcagg ggtccttgag ggggctgtgg tggccggtga gggccaaggg 900
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 agtctccccg ggctgccagc cctgactgtc gggcccccaa gtggtcacct 1050
 ccccggtgat gaaaaggcct tcagccctga ctgcttctg aactccctc 1100
 cttggcctcc ctgtgggtgc aatcccagca tgtgctgatt ctacagcagg 1150
 cagaaatgct ggtccccgt gccccggagg aatcttacca agtgccatca 1200
 tccttcacct cagcagcccc aaagggtac atcctacagc acagctcccc 1250
 tgacaaagtg agggagggca cgtgtccctg tgacagccag gataaaacat 1300
 cccccaaagt gctgggatta caggcgtgag ccaccgtgcc cggcccaaac 1350
 tactttttaa aacagctaca gggtaaaatc ctgcagcacc cactctggaa 1400
 aatactgctc ttaattttcc tgaagggtgc cccctgtttc tagttggtcc 1450
 aggattaggg atgtggggta tagggcatth aaatcctctc aagcgtctc 1500

caagcaccgcc cggcctgggg gtgagtttct catcccgcta ctgctgctgg 1550
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ggcaggaggt cctctccccc atccctccat ctggggctcc cccaacctct 1850
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attccggcct gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1950
aaaaaaaaaa aaaaaaaga 1969

<210> 50
<211> 283
<212> PRT
<213> Homo sapiens

<400> 50
Met Val Ser Ala Ala Ala Pro Ser Leu Leu Ile Leu Leu Leu Leu
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20 25 30
Lys Ala Thr Phe Leu Glu Asp Val Ala Gly Ser Gly Glu Ala Glu
35 40 45
Gly Ser Ser Ala Ser Ser Pro Ser Leu Pro Pro Pro Trp Thr Pro
50 55 60
Ala Leu Ser Pro Thr Ser Met Gly Pro Gln Pro Thr Thr Leu Gly
65 70 75
Gly Pro Ser Pro Pro Thr Asn Phe Leu Asp Gly Ile Val Asp Phe
80 85 90
Phe Arg Gln Tyr Val Met Leu Ile Ala Val Val Gly Ser Leu Ala
95 100 105
Phe Leu Leu Met Phe Ile Val Cys Ala Ala Val Ile Thr Arg Gln
110 115 120
Lys Gln Lys Ala Ser Ala Tyr Tyr Pro Ser Ser Phe Pro Lys Lys
125 130 135
Lys Tyr Val Asp Gln Ser Asp Arg Ala Gly Gly Pro Arg Ala Phe
140 145 150
Ser Glu Val Pro Asp Arg Ala Pro Asp Ser Arg Pro Glu Glu Ala
155 160 165

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asp | Ser | Ser | Arg | Gln | Leu | Gln | Ala | Asp | Ile | Leu | Ala | Ala | Thr |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gln | Asn | Leu | Lys | Ser | Pro | Thr | Arg | Ala | Ala | Leu | Gly | Gly | Gly | Asp |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gly | Ala | Arg | Met | Val | Glu | Gly | Arg | Gly | Ala | Glu | Glu | Glu | Glu | Lys |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gly | Ser | Gln | Glu | Gly | Asp | Gln | Glu | Val | Gln | Gly | His | Gly | Val | Pro |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Val | Glu | Thr | Pro | Glu | Ala | Gln | Glu | Glu | Pro | Cys | Ser | Gly | Val | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Glu | Gly | Ala | Val | Val | Ala | Gly | Glu | Gly | Gln | Gly | Glu | Leu | Glu | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ser | Leu | Leu | Leu | Ala | Gln | Glu | Ala | Gln | Gly | Pro | Val | Gly | Pro | Pro |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Glu | Ser | Pro | Cys | Ala | Cys | Ser | Ser | Val | His | Pro | Ser | Val | | |
| | | | | 275 | | | | | 280 | | | | | |

<210> 51
 <211> 1734
 <212> DNA
 <213> Homo sapiens

<400> 51
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 gaccagagg gagggaggac agggagtcgg aaggaggagg acagaggagg 100
 gcacagagac gcagagcaag ggcggcaagg aggagaccct ggtgggagga 150
 agacactctg gagagagagg gggctgggca gagatgaagt tccaggggcc 200
 cctggcctgc ctctctgttg ccctctgcct gggcagtggg gaggtctggc 250
 ccctgcagag cggagaggaa agcactggga caaatattgg ggaggccctt 300
 ggacatggcc tgggagacgc cctgagcgaa ggggtgggaa aggccattgg 350
 caaagaggcc ggaggggagc ctggctctaa agtcagttag gcccttggcc 400
 aagggaccag agaagcagtt ggcactggag tcaggcaggt tccaggcttt 450
 ggcgcagcag atgctttggg caacagggtc ggggaagcag cccatgctct 500
 gggaaacact gggcacgaga ttggcagaca ggcagaagat gtcattcgac 550
 acggagcaga tgctgtccgc ggctcctggc aggggggtgc tggccacagt 600
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 ccttgagggc cagggccagg gcaatcctgg aggtctgggg actccgtggg 700

| | | | | | |
|-------------|------------|------------|------------|-------------|------|
| tcacacggata | ccccggaaac | tcagcaggca | gcttttggaa | gaatcctcag | 750 |
| ggagctccct | ggggtcaagg | aggcaatgga | gggccaccaa | acttttgggac | 800 |
| caacactcag | ggagctgtgg | cccagcctgg | ctatggttca | gtgagagcca | 850 |
| gcaaccagaa | tgaaggggtg | acgaatcccc | caccatctgg | ctcaggtgga | 900 |
| ggctccagca | actctggggg | aggcagcggc | tcacagtcgg | gcagcagtg | 950 |
| cagtggcagc | aatggtgaca | acaacaatgg | cagcagcagt | ggtggcagca | 1000 |
| gcagtggcag | cagcagtggc | agcagcagtg | gcggcagcag | tggcggcagc | 1050 |
| agtggtgga | gcagtggcaa | cagtgggtgg | agcagaggtg | acagcggcag | 1100 |
| tgagtcctcc | tggggatcca | gcaccggctc | ctcctccggc | aaccacgggtg | 1150 |
| ggagcggcgg | aggaaatgga | cataaaccgg | ggtgtgaaaa | gccagggaa | 1200 |
| gaagcccgcg | ggagcgggga | atctgggatt | cagggcttca | gaggacaggg | 1250 |
| agtttccagc | aacatgaggg | aaataagcaa | agagggcaat | cgcctccttg | 1300 |
| gaggctctgg | agacaattat | cgggggcaag | ggtcgagctg | gggcagtgga | 1350 |
| ggaggtgacg | ctgttggtgg | agtcaatact | gtgaactctg | agacgtctcc | 1400 |
| tgggatgttt | aactttgaca | ctttctggaa | gaattttaaa | tccaagctgg | 1450 |
| gtttcatcaa | ctgggatgcc | ataaacaagg | accagagaag | ctctcgcatc | 1500 |
| ccgtgacctc | cagacaagga | gccaccagat | tggatgggag | ccccacact | 1550 |
| ccctccttaa | aacaccaccc | tctcatcact | aatctcagcc | cttgcccttg | 1600 |
| aaataaacct | tagctgcccc | acaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | 1650 |
| aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | 1700 |
| aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaa | 1734 | |

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<210> 52
<211> 440
<212> PRT
<213> Homo sapiens
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<400> 52
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Leu  Gly  Ser  Gly  Glu  Ala  Gly  Pro  Leu  Gln  Ser  Gly  Glu  Glu  Ser
          20          25          30

Thr  Gly  Thr  Asn  Ile  Gly  Glu  Ala  Leu  Gly  His  Gly  Leu  Gly  Asp
          35          40          45

Ala  Leu  Ser  Glu  Gly  Val  Gly  Lys  Ala  Ile  Gly  Lys  Glu  Ala  Gly

```

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|--|--|--|--|----|--|--|--|--|--|--|--|--|--|----|
| | | | | | | | | | 50 | | | | | | | | | | 55 | | | | | | | | | | 60 |
| Gly | Ala | Ala | Gly | Ser 65 | Lys | Val | Ser | Glu | Ala 70 | Leu | Gly | Gln | Gly | Thr 75 | | | | | | | | | | | | | | | |
| Arg | Glu | Ala | Val | Gly 80 | Thr | Gly | Val | Arg | Gln 85 | Val | Pro | Gly | Phe | Gly 90 | | | | | | | | | | | | | | | |
| Ala | Ala | Asp | Ala | Leu 95 | Gly | Asn | Arg | Val | Gly 100 | Glu | Ala | Ala | His | Ala 105 | | | | | | | | | | | | | | | |
| Leu | Gly | Asn | Thr | Gly 110 | His | Glu | Ile | Gly | Arg 115 | Gln | Ala | Glu | Asp | Val 120 | | | | | | | | | | | | | | | |
| Ile | Arg | His | Gly | Ala 125 | Asp | Ala | Val | Arg | Gly 130 | Ser | Trp | Gln | Gly | Val 135 | | | | | | | | | | | | | | | |
| Pro | Gly | His | Ser | Gly 140 | Ala | Trp | Glu | Thr | Ser 145 | Gly | Gly | His | Gly | Ile 150 | | | | | | | | | | | | | | | |
| Phe | Gly | Ser | Gln | Gly 155 | Gly | Leu | Gly | Gly | Gln 160 | Gly | Gln | Gly | Asn | Pro 165 | | | | | | | | | | | | | | | |
| Gly | Gly | Leu | Gly | Thr 170 | Pro | Trp | Val | His | Gly 175 | Tyr | Pro | Gly | Asn | Ser 180 | | | | | | | | | | | | | | | |
| Ala | Gly | Ser | Phe | Gly 185 | Met | Asn | Pro | Gln | Gly 190 | Ala | Pro | Trp | Gly | Gln 195 | | | | | | | | | | | | | | | |
| Gly | Gly | Asn | Gly | Gly 200 | Pro | Pro | Asn | Phe | Gly 205 | Thr | Asn | Thr | Gln | Gly 210 | | | | | | | | | | | | | | | |
| Ala | Val | Ala | Gln | Pro 215 | Gly | Tyr | Gly | Ser | Val 220 | Arg | Ala | Ser | Asn | Gln 225 | | | | | | | | | | | | | | | |
| Asn | Glu | Gly | Cys | Thr 230 | Asn | Pro | Pro | Pro | Ser 235 | Gly | Ser | Gly | Gly | Gly 240 | | | | | | | | | | | | | | | |
| Ser | Ser | Asn | Ser | Gly 245 | Gly | Gly | Ser | Gly | Ser 250 | Gln | Ser | Gly | Ser | Ser 255 | | | | | | | | | | | | | | | |
| Gly | Ser | Gly | Ser | Asn 260 | Gly | Asp | Asn | Asn | Asn 265 | Gly | Ser | Ser | Ser | Gly 270 | | | | | | | | | | | | | | | |
| Gly | Ser | Ser | Ser | Gly 275 | Ser | Ser | Ser | Gly | Ser 280 | Ser | Ser | Gly | Gly | Ser 285 | | | | | | | | | | | | | | | |
| Ser | Gly | Gly | Ser | Ser 290 | Gly | Gly | Ser | Ser | Gly 295 | Asn | Ser | Gly | Gly | Ser 300 | | | | | | | | | | | | | | | |
| Arg | Gly | Asp | Ser | Gly 305 | Ser | Glu | Ser | Ser | Trp 310 | Gly | Ser | Ser | Thr | Gly 315 | | | | | | | | | | | | | | | |
| Ser | Ser | Ser | Gly | Asn 320 | His | Gly | Gly | Ser | Gly 325 | Gly | Gly | Asn | Gly | His 330 | | | | | | | | | | | | | | | |
| Lys | Pro | Gly | Cys | Glu 335 | Lys | Pro | Gly | Asn | Glu 340 | Ala | Arg | Gly | Ser | Gly 345 | | | | | | | | | | | | | | | |

Glu Ser Gly Ile Gln Gly Phe Arg Gly Gln Gly Val Ser Ser Asn
350 355 360
Met Arg Glu Ile Ser Lys Glu Gly Asn Arg Leu Leu Gly Gly Ser
365 370 375
Gly Asp Asn Tyr Arg Gly Gln Gly Ser Ser Trp Gly Ser Gly Gly
380 385 390
Gly Asp Ala Val Gly Gly Val Asn Thr Val Asn Ser Glu Thr Ser
395 400 405
Pro Gly Met Phe Asn Phe Asp Thr Phe Trp Lys Asn Phe Lys Ser
410 415 420
Lys Leu Gly Phe Ile Asn Trp Asp Ala Ile Asn Lys Asp Gln Arg
425 430 435
Ser Ser Arg Ile Pro
440

<210> 53
<211> 3580
<212> DNA
<213> Homo sapiens

<400> 53
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ctctcctgct gcgcctgcac cggagcttgg tgttgctgca ggagagttag 200
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gacggagtgg gggcttcatt aggaaaatca cccccaccac taccaccagc 500
ctgggagccc agccttccca gaccagccag gggctgcagg cacagctcgc 550
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 ttgcaacaga gaaagcctgt gcttggctgt cagccaacat cacagcactg 950
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 gccagttcct gtgcccacct gctgagcagc atctggcaaa gtgctctgtg 1200
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| Leu | Phe | Gln | Ile | Pro | Thr | Val | Pro | Glu | Asp | Leu | Phe | Phe | Leu | Glu |
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| Glu | Gly | Pro | Ser | Tyr | Ala | Phe | Glu | Val | Asp | Thr | Val | Ala | Pro | Glu |
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| His | Gly | Leu | Asp | Asn | Ala | Pro | Val | Val | Asp | Gln | Gln | Leu | Leu | Tyr |
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| Thr | Cys | Cys | Pro | Tyr | Ile | Gly | Glu | Leu | Arg | Lys | Leu | Leu | Ala | Ser |
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| Trp | Val | Ser | Gly | Ser | Ser | Gly | Arg | Ser | Gly | Gly | Phe | Met | Arg | Lys |
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| Ile | Thr | Pro | Thr | Thr | Thr | Thr | Ser | Leu | Gly | Ala | Gln | Pro | Ser | Gln |
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| Thr | Ser | Gln | Gly | Leu | Gln | Ala | Gln | Leu | Ala | Gln | Ala | Phe | Phe | His |
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| Asn | Gln | Pro | Pro | Ser | Leu | Arg | Arg | Thr | Val | Glu | Phe | Val | Ala | Glu |
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| Arg | Ile | Gly | Ser | Asn | Cys | Val | Lys | His | Ile | Lys | Ala | Thr | Leu | Val |
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| Val | Thr | Gln | Gly | Glu | Glu | Gly | Gly | Asp | Pro | Ala | Gln | Leu | Leu | Glu |
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| Ile | Leu | Cys | Ser | Gln | Leu | Cys | Pro | His | Gly | Ala | Gln | Ala | Leu | Ala |
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| Leu | Gly | Arg | Glu | Phe | Cys | Gln | Arg | Lys | Ser | Pro | Gly | Ala | Val | Arg |
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| Ala | Leu | Leu | Pro | Glu | Glu | Thr | Pro | Ala | Ala | Val | Leu | Ser | Ser | Ala |
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| Glu | Asn | Ile | Ala | Val | Gly | Leu | Ala | Thr | Glu | Lys | Ala | Cys | Ala | Trp |
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| Leu | Ser | Ala | Asn | Ile | Thr | Ala | Leu | Ile | Arg | Arg | Glu | Val | Lys | Ala |
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| Ala | Val | Ser | Arg | Thr | Leu | Arg | Ala | Gln | Gly | Pro | Glu | Pro | Ala | Ala |
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| Phe | Ala | Leu | Ile | Thr | Ile | Leu | Ile | Leu | Tyr | Ser | Ser | Asn | Ser | Ala |
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Glu Ile Glu Arg Ala Glu Cys Thr Ile Arg Met Asn Asp Ala Pro
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Thr Thr Gly Tyr Ser Ala Asp Val Gly Asn Lys Thr Thr Tyr Arg
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Pro Pro Ser Lys Met Gln Lys Pro Gln Gly Ser Leu Val Arg Val
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Ile Gln Arg Ala Gly Leu Val Phe Pro Asn Met Glu Ala Tyr Ala
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Val Ser Pro Gly Arg Met Arg Gln Phe Asp Asp Leu Phe Arg Gly
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Glu Thr Gly Lys Asp Arg Glu Lys Ser His Ser Trp Leu Ser Thr
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Gly Trp Phe Thr Met Val Ile Ala Val Glu Leu Cys Asp His Val
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His Val Tyr Gly Met Val Pro Pro Asn Tyr Cys Ser Gln Arg Pro
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Arg Leu Gln Arg Met Pro Tyr His Tyr Tyr Glu Pro Lys Gly Pro
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Asp Glu Cys Val Thr Tyr Ile Gln Asn Glu His Ser Arg Lys Gly
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<400> 58

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| Val | Thr | Leu | Ala | Cys | Leu | Leu | Leu | Ala | Thr | Ala | Gly | Cys | Phe | Ala |
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| Asp | Leu | Asn | Glu | Val | Pro | Gln | Val | Thr | Val | Gln | Pro | Ala | Ser | Thr |
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| Val | Gln | Lys | Pro | Gly | Gly | Thr | Val | Ile | Leu | Gly | Cys | Val | Val | Glu |
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| Pro | Pro | Arg | Met | Asn | Val | Thr | Trp | Arg | Leu | Asn | Gly | Lys | Glu | Leu |
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| Asn | Gly | Ser | Asp | Asp | Ala | Leu | Gly | Val | Leu | Ile | Thr | His | Gly | Thr |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Leu | Val | Ile | Thr | Ala | Leu | Asn | Asn | His | Thr | Val | Gly | Arg | Tyr | Gln |
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| Cys | Val | Ala | Arg | Met | Pro | Ala | Gly | Ala | Val | Ala | Ser | Val | Pro | Ala |
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| Thr | Val | Thr | Leu | Ala | Asn | Leu | Gln | Asp | Phe | Lys | Leu | Asp | Val | Gln |
| | | | | 125 | | | | | 130 | | | | | 135 |
| His | Val | Ile | Glu | Val | Asp | Glu | Gly | Asn | Thr | Ala | Val | Ile | Ala | Cys |
| | | | | 140 | | | | | 145 | | | | | 150 |
| His | Leu | Pro | Glu | Ser | His | Pro | Lys | Ala | Gln | Val | Arg | Tyr | Ser | Val |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Lys | Gln | Glu | Trp | Leu | Glu | Ala | Ser | Arg | Gly | Asn | Tyr | Leu | Ile | Met |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Pro | Ser | Gly | Asn | Leu | Gln | Ile | Val | Asn | Ala | Ser | Gln | Glu | Asp | Glu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gly | Met | Tyr | Lys | Cys | Ala | Ala | Tyr | Asn | Pro | Val | Thr | Gln | Glu | Val |
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| Lys | Thr | Ser | Gly | Ser | Ser | Asp | Arg | Leu | Arg | Val | Arg | Arg | Ser | Thr |
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| Ala | Glu | Ala | Ala | Arg | Ile | Ile | Tyr | Pro | Pro | Glu | Ala | Gln | Thr | Ile |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ile | Val | Thr | Lys | Gly | Gln | Ser | Leu | Ile | Leu | Glu | Cys | Val | Ala | Ser |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Gly | Ile | Pro | Pro | Pro | Arg | Val | Thr | Trp | Ala | Lys | Asp | Gly | Ser | Ser |
| | | | | 260 | | | | | 265 | | | | | 270 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Val Thr Gly Tyr | Asn Lys Thr Arg Phe | Leu Leu Ser Asn Leu Leu | 275 | 280 | 285 |
| Ile Asp Thr Thr | Ser Glu Glu Asp Ser | Gly Thr Tyr Arg Cys Met | 290 | 295 | 300 |
| Ala Asp Asn Gly | Val Gly Gln Pro Gly | Ala Ala Val Ile Leu Tyr | 305 | 310 | 315 |
| Asn Val Gln Val | Phe Glu Pro Pro Glu | Val Thr Met Glu Leu Ser | 320 | 325 | 330 |
| Gln Leu Val Ile | Pro Trp Gly Gln Ser | Ala Lys Leu Thr Cys Glu | 335 | 340 | 345 |
| Val Arg Gly Asn | Pro Pro Pro Ser Val | Leu Trp Leu Arg Asn Ala | 350 | 355 | 360 |
| Val Pro Leu Ile | Ser Ser Gln Arg Leu | Arg Leu Ser Arg Arg Ala | 365 | 370 | 375 |
| Leu Arg Val Leu | Ser Met Gly Pro Glu | Asp Glu Gly Val Tyr Gln | 380 | 385 | 390 |
| Cys Met Ala Glu | Asn Glu Val Gly Ser | Ala His Ala Val Val Gln | 395 | 400 | 405 |
| Leu Arg Thr Ser | Arg Pro Ser Ile Thr | Pro Arg Leu Trp Gln Asp | 410 | 415 | 420 |
| Ala Glu Leu Ala | Thr Gly Thr Pro Pro | Val Ser Pro Ser Lys Leu | 425 | 430 | 435 |
| Gly Asn Pro Glu | Gln Met Leu Arg Gly | Gln Pro Ala Leu Pro Arg | 440 | 445 | 450 |
| Pro Pro Thr Ser | Val Gly Pro Ala Ser | Pro Lys Cys Pro Gly Glu | 455 | 460 | 465 |
| Lys Gly Gln Gly | Ala Pro Ala Glu Ala | Pro Ile Ile Leu Ser Ser | 470 | 475 | 480 |
| Pro Arg Thr Ser | Lys Thr Asp Ser Tyr | Glu Leu Val Trp Arg Pro | 485 | 490 | 495 |
| Arg His Glu Gly | Ser Gly Arg Ala Pro | Ile Leu Tyr Tyr Val Val | 500 | 505 | 510 |
| Lys His Arg Lys | Gln Val Thr Asn Ser | Ser Asp Asp Trp Thr Ile | 515 | 520 | 525 |
| Ser Gly Ile Pro | Ala Asn Gln His Arg | Leu Thr Leu Thr Arg Leu | 530 | 535 | 540 |
| Asp Pro Gly Ser | Leu Tyr Glu Val Glu | Met Ala Ala Tyr Asn Cys | 545 | 550 | 555 |
| Ala Gly Glu Gly | Gln Thr Ala Met Val | Thr Phe Arg Thr Gly Arg | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|--|
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| Arg | Asp | Asp | Pro | Gly 590 | Ala | Ser | Pro | Gln | Ser 595 | Ser | Ser | Gln | Pro | Asp 600 | |
| His | Gly | Arg | Leu | Ser 605 | Pro | Pro | Glu | Ala | Pro 610 | Asp | Arg | Pro | Thr | Ile 615 | |
| Ser | Thr | Ala | Ser | Glu 620 | Thr | Ser | Val | Tyr | Val 625 | Thr | Trp | Ile | Pro | Arg 630 | |
| Gly | Asn | Gly | Gly | Phe 635 | Pro | Ile | Gln | Ser | Phe 640 | Arg | Val | Glu | Tyr | Lys 645 | |
| Lys | Leu | Lys | Lys | Val 650 | Gly | Asp | Trp | Ile | Leu 655 | Ala | Thr | Ser | Ala | Ile 660 | |
| Pro | Pro | Ser | Arg | Leu 665 | Ser | Val | Glu | Ile | Thr 670 | Gly | Leu | Glu | Lys | Gly 675 | |
| Thr | Ser | Tyr | Lys | Phe 680 | Arg | Val | Arg | Ala | Leu 685 | Asn | Met | Leu | Gly | Glu 690 | |
| Ser | Glu | Pro | Ser | Ala 695 | Pro | Ser | Arg | Pro | Tyr 700 | Val | Val | Ser | Gly | Tyr 705 | |
| Ser | Gly | Arg | Val | Tyr 710 | Glu | Arg | Pro | Val | Ala 715 | Gly | Pro | Tyr | Ile | Thr 720 | |
| Phe | Thr | Asp | Ala | Val 725 | Asn | Glu | Thr | Thr | Ile 730 | Met | Leu | Lys | Trp | Met 735 | |
| Tyr | Ile | Pro | Ala | Ser 740 | Asn | Asn | Asn | Thr | Pro 745 | Ile | His | Gly | Phe | Tyr 750 | |
| Ile | Tyr | Tyr | Arg | Pro 755 | Thr | Asp | Ser | Asp | Asn 760 | Asp | Ser | Asp | Tyr | Lys 765 | |
| Lys | Asp | Met | Val | Glu 770 | Gly | Asp | Lys | Tyr | Trp 775 | His | Ser | Ile | Ser | His 780 | |
| Leu | Gln | Pro | Glu | Thr 785 | Ser | Tyr | Asp | Ile | Lys 790 | Met | Gln | Cys | Phe | Asn 795 | |
| Glu | Gly | Gly | Glu | Ser 800 | Glu | Phe | Ser | Asn | Val 805 | Met | Ile | Cys | Glu | Thr 810 | |
| Lys | Ala | Arg | Lys | Ser 815 | Ser | Gly | Gln | Pro | Gly 820 | Arg | Leu | Pro | Pro | Pro 825 | |
| Thr | Leu | Ala | Pro | Pro 830 | Gln | Pro | Pro | Leu | Pro 835 | Glu | Thr | Ile | Glu | Arg 840 | |
| Pro | Val | Gly | Thr | Gly 845 | Ala | Met | Val | Ala | Arg 850 | Ser | Ser | Asp | Leu | Pro 855 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Tyr | Leu | Ile | Val | Gly | Val | Val | Leu | Gly | Ser | Ile | Val | Leu | Ile | Ile | 860 | 865 | 870 |
| Val | Thr | Phe | Ile | Pro | Phe | Cys | Leu | Trp | Arg | Ala | Trp | Ser | Lys | Gln | 875 | 880 | 885 |
| Lys | His | Thr | Thr | Asp | Leu | Gly | Phe | Pro | Arg | Ser | Ala | Leu | Pro | Pro | 890 | 895 | 900 |
| Ser | Cys | Pro | Tyr | Thr | Met | Val | Pro | Leu | Gly | Gly | Leu | Pro | Gly | His | 905 | 910 | 915 |
| Gln | Ala | Ser | Gly | Gln | Pro | Tyr | Leu | Ser | Gly | Ile | Ser | Gly | Arg | Ala | 920 | 925 | 930 |
| Cys | Ala | Asn | Gly | Ile | His | Met | Asn | Arg | Gly | Cys | Pro | Ser | Ala | Ala | 935 | 940 | 945 |
| Val | Gly | Tyr | Pro | Gly | Met | Lys | Pro | Gln | Gln | His | Cys | Pro | Gly | Glu | 950 | 955 | 960 |
| Leu | Gln | Gln | Gln | Ser | Asp | Thr | Ser | Ser | Leu | Leu | Arg | Gln | Thr | His | 965 | 970 | 975 |
| Leu | Gly | Asn | Gly | Tyr | Asp | Pro | Gln | Ser | His | Gln | Ile | Thr | Arg | Gly | 980 | 985 | 990 |
| Pro | Lys | Ser | Ser | Pro | Asp | Glu | Gly | Ser | Phe | Leu | Tyr | Thr | Leu | Pro | 995 | 1000 | 1005 |
| Asp | Asp | Ser | Thr | His | Gln | Leu | Leu | Gln | Pro | His | His | Asp | Cys | Cys | 1010 | 1015 | 1020 |
| Gln | Arg | Gln | Glu | Gln | Pro | Ala | Ala | Val | Gly | Gln | Ser | Gly | Val | Arg | 1025 | 1030 | 1035 |
| Arg | Ala | Pro | Asp | Ser | Pro | Val | Leu | Glu | Ala | Val | Trp | Asp | Pro | Pro | 1040 | 1045 | 1050 |
| Phe | His | Ser | Gly | Pro | Pro | Cys | Cys | Leu | Gly | Leu | Val | Pro | Val | Glu | 1055 | 1060 | 1065 |
| Glu | Val | Asp | Ser | Pro | Asp | Ser | Cys | Gln | Val | Ser | Gly | Gly | Asp | Trp | 1070 | 1075 | 1080 |
| Cys | Pro | Gln | His | Pro | Val | Gly | Ala | Tyr | Val | Gly | Gln | Glu | Pro | Gly | 1085 | 1090 | 1095 |
| Met | Gln | Leu | Ser | Pro | Gly | Pro | Leu | Val | Arg | Val | Ser | Phe | Glu | Thr | 1100 | 1105 | 1110 |
| Pro | Pro | Leu | Thr | Ile | | | | | | | | | | | 1115 | | |

<210> 59
 <211> 25
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-25
 <223> Synthetic construct.

<400> 59
 gggaaacaca gcagtcattg cctgc 25

<210> 60
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 60
 gcacacgtag cctgtcgctg gaggc 24

<210> 61
 <211> 42
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-42
 <223> Synthetic construct.

<400> 61
 cccccaaaag cccaggtccg gtacagcgtc aaacaagagt gg 42

<210> 62
 <211> 1661
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 678
 <223> unknown base

<400> 62
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 cgctgtctcc tcccaggctc ccgcggccga cccccgcgca acatgcagcc 100
 cacggggccgc gaggggtccc gcgcgctcag ccggcggtat ctgcggcgctc 150
 tgctgtctct gctactgctg ctgctgctgc ggcagcccgt aaccgcgcgcg 200
 gagaccacgc cgggcgcccc cagagccctc tccacgctgg gctccccccag 250
 cctcttcacc acgccgggtg tccccagcgc cctcactacc ccaggcctca 300
 ctacgccagg ccccccaaa accctggacc ttcggggctg cgcgcaggcc 350

<210> 63
<211> 487
<212> PRT
<213> Homo sapiens

[illegible]

<400> 63

| 260 | 265 | 270 |
|-------------------------------------|-------------------------|-----|
| Ser Asp Thr Leu Ile Arg Arg Val Leu | Glu Val Ser Gln Ala Pro | |
| 275 | 280 | 285 |
| Val Ile Phe Ser His Ser Ala Ala Arg | Ala Val Cys Asp Asn Leu | |
| 290 | 295 | 300 |
| Leu Asn Val Pro Asp Asp Ile Leu Gln | Leu Leu Lys Asn Gly Gly | |
| 305 | 310 | 315 |
| Ile Val Met Val Thr Leu Ser Met Gly | Val Leu Gln Cys Asn Leu | |
| 320 | 325 | 330 |
| Leu Ala Asn Val Ser Thr Val Ala Asp | His Phe Asp His Ile Arg | |
| 335 | 340 | 345 |
| Ala Val Ile Gly Ser Glu Phe Ile Gly | Ile Gly Gly Asn Tyr Asp | |
| 350 | 355 | 360 |
| Gly Thr Gly Arg Phe Pro Gln Gly Leu | Glu Asp Val Ser Thr Tyr | |
| 365 | 370 | 375 |
| Pro Val Leu Ile Glu Glu Leu Leu Ser | Arg Xaa Trp Ser Glu Glu | |
| 380 | 385 | 390 |
| Glu Leu Gln Gly Val Leu Arg Gly Asn | Leu Leu Arg Val Phe Arg | |
| 395 | 400 | 405 |
| Gln Val Glu Lys Val Arg Glu Glu Ser | Arg Ala Gln Ser Pro Val | |
| 410 | 415 | 420 |
| Glu Ala Glu Phe Pro Tyr Gly Gln Leu | Ser Thr Ser Cys His Ser | |
| 425 | 430 | 435 |
| His Leu Val Pro Gln Asn Gly His Gln | Ala Thr His Leu Glu Val | |
| 440 | 445 | 450 |
| Thr Lys Gln Pro Thr Asn Arg Val Pro | Trp Arg Ser Ser Asn Ala | |
| 455 | 460 | 465 |
| Ser Pro Tyr Leu Val Pro Gly Leu Val | Ala Ala Ala Thr Ile Pro | |
| 470 | 475 | 480 |
| Thr Phe Thr Gln Trp Leu Cys | | |
| 485 | | |

<210> 64
 <211> 25
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial sequence
 <222> 1-25
 <223> Synthetic construct.

 <400> 64

ccttcacctg cagtacacca tgggc 25

<210> 65
 <211> 25
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-25
 <223> Synthetic construct.

<400> 65
 gtcacacaca gctctggcag ctgag 25

<210> 66
 <211> 47
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-47
 <223> Synthetic construct.

<400> 66
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<210> 67
 <211> 1564
 <212> DNA
 <213> Homo sapiens

<400> 67
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 aacacccaca gatccctcta tgactgcaat gtgagggtgc cggctttgct 100
 ggcccagcaa gcctgataag catgaagctc ttatcttttg tggctgtggt 150
 cgggtgtttg ctggtgcccc cagctgaagc caacaagagt tctgaagata 200
 tccggtgcaa atgcatctgt ccaccttata gaaacatcag tgggcacatt 250
 tacaaccaga atgtatccca gaaggactgc aactgcctgc acgtggtgga 300
 gcccatgcca gtgcctggcc atgacgtgga ggcctactgc ctgctgtgcg 350
 agtgcaggta cgaggagcgc agcaccacca ccatcaaggt catcattgtc 400
 atctacctgt ccgtggtggg tgcctgtgtg ctctacatgg ccttcctgat 450
 gctggtggac cctctgatcc gaaagccgga tgcatacact gagcaactgc 500
 acaatgagga ggagaatgag gatgctcgct ctatggcagc agctgctgca 550
 tccctcgggg gaccccgagc aaacacagtc ctggagcgtg tggaaggtgc 600

ccagcagcgg tggaagctgc aggtgcagga gcagcggaag acagtcttcg 650
atcggcacaa gatgctcagc tagatgggct ggtgtggttg ggtcaaggcc 700
ccaacacccat ggctgccagc ttccaggctg gacaaagcag ggggctactt 750
ctcccttccc tcggttccag tcttcccttt aaaagcctgt ggcatttttc 800
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ctcaggagtg gatgcgatct gtctctcctg gctccactct tgccgccttc 1000
cagctctgag tcttggaat gttgttacct ttggaagata aagctgggtc 1050
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gttcctttct gcagtgggtc ttatcaccac ctccctcca gcccggcgc 1150
ctcagcccca gcccagctc cagccctgag gacagctctg atgggagagc 1200
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ctctgctgcc ggtccctca cctgcacttg aggggtctgg gcagtcctc 1350
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gactcgaggc tgagcgtgga tctgaacacc acagcccctg tacttgggtt 1450
gcctcttgtc cctgaacttc gttgtaccag tgcattgaga gaaaattttg 1500
tcctcttgtc ttagagttgt gtgtaaata aggaagccat cattaaattg 1550
ttttatttct ctca 1564

<210> 68
<211> 183
<212> PRT
<213> Homo sapiens

<400> 68
Met Lys Leu Leu Ser Leu Val Ala Val Val Gly Cys Leu Leu Val
1 5 10 15
Pro Pro Ala Glu Ala Asn Lys Ser Ser Glu Asp Ile Arg Cys Lys
20 25 30
Cys Ile Cys Pro Pro Tyr Arg Asn Ile Ser Gly His Ile Tyr Asn
35 40 45
Gln Asn Val Ser Gln Lys Asp Cys Asn Cys Leu His Val Val Glu
50 55 60

Pro Met Pro Val Pro Gly His Asp Val Glu Ala Tyr Cys Leu Leu
65 70 75
Cys Glu Cys Arg Tyr Glu Glu Arg Ser Thr Thr Thr Ile Lys Val
80 85 90
Ile Ile Val Ile Tyr Leu Ser Val Val Gly Ala Leu Leu Leu Tyr
95 100 105
Met Ala Phe Leu Met Leu Val Asp Pro Leu Ile Arg Lys Pro Asp
110 115 120
Ala Tyr Thr Glu Gln Leu His Asn Glu Glu Glu Asn Glu Asp Ala
125 130 135
Arg Ser Met Ala Ala Ala Ala Ser Leu Gly Gly Pro Arg Ala
140 145 150
Asn Thr Val Leu Glu Arg Val Glu Gly Ala Gln Gln Arg Trp Lys
155 160 165
Leu Gln Val Gln Glu Gln Arg Lys Thr Val Phe Asp Arg His Lys
170 175 180
Met Leu Ser

<210> 69
<211> 3170
<212> DNA
<213> Homo sapiens

<400> 69
agcgggtctc gcttgggttc cgctaatttc tgtcctgagg cgtgagactg 50
agttcatagg gtcttgggtc cccgaaccag gaagggttga gggaacacaa 100
tctgcaagcc cccgcgaccc aagtgagggg ccccggtgtg gggtcctccc 150
tccctttgca ttcccacccc tccgggcttt gcgtcttcct ggggaccccc 200
tcgccgggag atggccgcgt tgatgcggag caaggattcg tcctgctgcc 250
tgctcctact ggccgcggtg ctgatggttg agagctcaca gatcggcagt 300
tcgcgggcca aactcaactc catcaagtcc tctctgggcg gggagacgcc 350
tggtcaggcc gccaatcgat ctgcgggcat gtaccaagga ctggcattcg 400
gcggcagtaa gaagggcaaa aacctggggc aggcctaccc ttgtagcagt 450
gataaggagt gtgaagttgg gaggtattgc cacagtcccc accaaggatc 500
atcggcctgc atggtgtgtc ggagaaaaaa gaagcgctgc caccgagatg 550
gcatgtgctg cccagttacc cgctgcaata atggcatctg tatcccagtt 600
actgaaagca tcttaacccc tcacatcccg gctctggatg gtactcggca 650

cagagatcga aaccacgggc attactcaaa ccatgacttg ggatggcaga 700
 atctaggaag accacacact aagatgtcac atataaaagg gcatgaagga 750
 gacccctgcc tacgatcatc agactgcatt gaagggtttt gctgtgctcg 800
 tcattttctgg accaaaatct gcaaaccagt gctccatcag ggggaagtct 850
 gtaccaaaca acgcaagaag ggttctcatg ggctggaaat tttccagcgt 900
 tgcgactgtg cgaagggcct gtcttgcaaa gtatggaaag atgccaccta 950
 ctctccaaa gccagactcc atgtgtgtca gaaaatttga tcaccattga 1000
 ggaacatcat caattgcaga ctgtgaagtt gtgtatttaa tgcattatag 1050
 catggtggaa aataagggtc agatgcagaa gaatggctaa aataagaaac 1100
 gtgataagaa tatagatgat cacaaaaagg gagaaagaaa acatgaactg 1150
 aatagattag aatgggtgac aaatgcagtg cagccagtgt ttccattatg 1200
 caacttgtct atgtaaataa tgtacacatt tgtggaaaat gctattatta 1250
 agagaacaag cacacagtgg aaattactga tgagtagcat gtgactttcc 1300
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 aaaatactcc tagaataact tggtatacaa taggttctaa aaataaaatt 1450
 gctaaacaag aaatgaaaac atggagcatt gttaatttac aacagaaaat 1500
 taccttttga tttgtaacac tacttctgct gttcaatcaa gagtcttggt 1550
 agataagaaa aaaatcagtc aatatttcca aataattgca aaataatggc 1600
 cagttgttta ggaaggcctt taggaagaca aataaataac aaacaaacag 1650
 ccacaaatac ttttttttca aaattttagt ttacactgta attaataaga 1700
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 aactataccc ataaattgtg actagtaaaa tacttacaca gagcagaatt 1850
 ttcacagatg gcaaaaaaat ttaaagatgt ccaatatatg tgggaaaaga 1900
 gctaacagag agatcattat ttcttaaaga ttggccataa cctatatattt 1950
 gatagaatta gattggtaaa tacatgtatt catacatact ctgtggtaat 2000
 agagacttaa gctggatctg tactgcactg gagtaagcaa gaaaattggg 2050
 aaaacttttt cgtttgttca ggttttggca acacatagat catatgtctg 2100

aggcacaagt tggctgttca tctttgaaac caggggatgc acagtctaaa 2150
tgaatatctg catgggattt gctatcataa tatttactat gcagatgaat 2200
tcagtgtgag gtctgtgtgc cgtactatcc tcaaattatt tattttatag 2250
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tctgaagta gacagagtag tgagggttca ttgccctcta taagcttctg 2350
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tcttttactt aaatcccatc tgcagtctca aatttaagtt ctcccagtag 2700
agattgagtt tgagcctgta tatctattaa aaatttcaac ttcccacata 2750
tatttactaa gatgattaag acttacattt tctgcacagg tctgcaaaaa 2800
caaaaattat aaactagtcc atccaagaac caaagtttgt ataaacaggt 2850
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atataacaat tatttatattt acaatttggt ttctgcaata tttttcttat 2950
gtccaccctt ttaaaaatta ttatttgaag taatttatat acaggaaatg 3000
ttaatgagat gtattttctt atagagatat ttcttacaga aagctttgta 3050
gcagaatata tttgcagcta ttgactttgt aatttaggaa aaatgtataa 3100
taagataaaa tctattaaat ttttctcttc taaaaactga aaaaaaaaaa 3150
aaaaaaaaaa aaaaaaaaaa 3170

<210> 70
<211> 259
<212> PRT
<213> Homo sapiens

<400> 70
Met Ala Ala Leu Met Arg Ser Lys Asp Ser Ser Cys Cys Leu Leu
1 5 10 15
Leu Leu Ala Ala Val Leu Met Val Glu Ser Ser Gln Ile Gly Ser
20 25 30
Ser Arg Ala Lys Leu Asn Ser Ile Lys Ser Ser Leu Gly Gly Glu
35 40 45

tagtcagttt tcattgcata gtaatatatt catgtagtat tttctaagtt 250
atatttttagt aattcatatg ttttagatta taggttttaa cataacttg 300
aaaataacttg atgtgtttta aagccttggg cagaaattct gtattgttga 350
ggatttggtc ttttatcccc cttttaaggt catccgtcct tggctcagga 400
tttgagagac ttgcaccacc aaaaatggca aacatcacca gctcccagat 450
tttggaaccag ttgaaagctc cgagtttggg ccagtttacc accaccccaa 500
gtacacagca gaatagtaca agtcacccta caactactac ttcttgggac 550
ctcaagcccc caacatccca gtcctcagtc ctcaagtcac ttgacttcaa 600
atctcaacct gagccatccc cagttcttag ccagttgagc cagcgacaac 650
agcaccagag ccaggcagtc actgttctc ctcttggttt ggagtccttt 700
ccttcccagg caaaacttcg agaatcaaca cctggagaca gtccctccac 750
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tgtctgtcca ccagccacag cccaaacaca tcaaacttgc taagcggcgg 850
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cccataccaa agccctgtga gttcatcaga gtcagctcca ggaaccatca 1250
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gccgggtgtg gtggcggcgc gtgcctgtaa tcccagctac ttgggaggct 1750
gaggcacaag aatcgcttga gccagcttgg gctacaaagt gagactccgt 1800
ctgaaaaga 1809

<210> 72
<211> 363
<212> PRT
<213> Homo sapiens

<400> 72
Met Cys Phe Lys Ala Leu Gly Arg Asn Ser Val Leu Leu Arg Ile
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Cys Ser Phe Ile Pro Leu Leu Lys Ser Ser Val Leu Gly Ser Gly
20 25 30
Phe Gly Glu Leu Ala Pro Pro Lys Met Ala Asn Ile Thr Ser Ser
35 40 45
Gln Ile Leu Asp Gln Leu Lys Ala Pro Ser Leu Gly Gln Phe Thr
50 55 60
Thr Thr Pro Ser Thr Gln Gln Asn Ser Thr Ser His Pro Thr Thr
65 70 75
Thr Thr Ser Trp Asp Leu Lys Pro Pro Thr Ser Gln Ser Ser Val
80 85 90
Leu Ser His Leu Asp Phe Lys Ser Gln Pro Glu Pro Ser Pro Val
95 100 105
Leu Ser Gln Leu Ser Gln Arg Gln Gln His Gln Ser Gln Ala Val
110 115 120
Thr Val Pro Pro Pro Gly Leu Glu Ser Phe Pro Ser Gln Ala Lys
125 130 135
Leu Arg Glu Ser Thr Pro Gly Asp Ser Pro Ser Thr Val Asn Lys
140 145 150
Leu Leu Gln Leu Pro Ser Thr Thr Ile Glu Asn Ile Ser Val Ser
155 160 165
Val His Gln Pro Gln Pro Lys His Ile Lys Leu Ala Lys Arg Arg
170 175 180
Ile Pro Pro Ala Ser Lys Ile Pro Ala Ser Ala Val Glu Met Pro
185 190 195
Gly Ser Ala Asp Val Thr Gly Leu Asn Val Gln Phe Gly Ala Leu
200 205 210
Glu Phe Gly Ser Glu Pro Ser Leu Ser Glu Phe Gly Ser Ala Pro
215 220 225

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ser | Glu | Asn | Ser | Asn | Gln | Ile | Pro | Ile | Ser | Leu | Tyr | Ser | Lys | 230 | 235 | 240 |
| Ser | Leu | Ser | Glu | Pro | Leu | Asn | Thr | Ser | Leu | Ser | Met | Thr | Ser | Ala | 245 | 250 | 255 |
| Val | Gln | Asn | Ser | Thr | Tyr | Thr | Thr | Ser | Val | Ile | Thr | Ser | Cys | Ser | 260 | 265 | 270 |
| Leu | Thr | Ser | Ser | Ser | Leu | Asn | Ser | Ala | Ser | Pro | Val | Ala | Met | Ser | 275 | 280 | 285 |
| Ser | Ser | Tyr | Asp | Gln | Ser | Ser | Val | His | Asn | Arg | Ile | Pro | Tyr | Gln | 290 | 295 | 300 |
| Ser | Pro | Val | Ser | Ser | Ser | Glu | Ser | Ala | Pro | Gly | Thr | Ile | Met | Asn | 305 | 310 | 315 |
| Gly | His | Gly | Gly | Gly | Arg | Ser | Gln | Gln | Thr | Leu | Asp | Ser | Lys | Tyr | 320 | 325 | 330 |
| Ser | Ser | Lys | Leu | Leu | Leu | Ser | Trp | Leu | Val | Pro | Thr | Lys | Gln | Arg | 335 | 340 | 345 |
| Lys | Arg | Ile | Ala | His | Val | Met | Trp | Lys | Thr | Pro | Val | Gly | Gln | Trp | 350 | 355 | 360 |

Leu Ile Arg

<210> 73
 <211> 26
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-26
 <223> Synthetic construct.

<400> 73
 aattcatggc aaatatttcc cttccc 26

<210> 74
 <211> 22
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-22
 <223> Synthetic construct.

<400> 74
 tggtaaactg gcccaaactc gg 22

<210> 75
 <211> 50

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cccttcacgc ggctgggtccc gctttcctgg aatttggcct gggcgtatgc 1200
agaggccgcc tccacacccc tccccaggg gcttgggtggc agcatagccc 1250
ccacccctgc ggcctttgct cacgggtggc cctgcccacc cctggcacia 1300
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cagcccaaaa actggggtca gcctcagggc aggagtccca ctctccagg 1450
gctctgctcg tccggggctg ggagatgttc ctggaggagg aactcccat 1500
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tggctgagga caggggaggg agtgaagttg gtttgggggtg gcctgtgttg 1900
ccactctcag cccccacat ttgcatctgc tgggtggacct gccaccatca 1950
caataaagtc cccatctgat ttttaaaaaa aaaaaaaaaa 1989

<210> 77
<211> 341
<212> PRT
<213> Homo sapiens

<400> 77
Met Ala Leu Pro Ser Arg Ile Leu Leu Trp Lys Leu Val Leu Leu
1 5 10 15
Gln Ser Ser Ala Val Leu Leu His Ser Ala Val Glu Glu Thr Asp
20 25 30
Ala Gly Leu Tyr Thr Cys Asn Leu His His His Tyr Cys His Leu
35 40 45
Tyr Glu Ser Leu Ala Val Arg Leu Glu Val Thr Asp Gly Pro Pro
50 55 60
Ala Thr Pro Ala Tyr Trp Asp Gly Glu Lys Glu Val Leu Ala Val
65 70 75

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| Ala | Arg | Gly | Ala | Pro 80 | Ala | Leu | Leu | Thr | Cys 85 | Val | Asn | Arg | Gly | His 90 |
| Val | Trp | Thr | Asp | Arg 95 | His | Val | Glu | Glu | Ala 100 | Gln | Gln | Val | Val | His 105 |
| Trp | Asp | Arg | Gln | Pro 110 | Pro | Gly | Val | Pro | His 115 | Asp | Arg | Ala | Asp | Arg 120 |
| Leu | Leu | Asp | Leu | Tyr 125 | Ala | Ser | Gly | Glu | Arg 130 | Arg | Ala | Tyr | Gly | Pro 135 |
| Leu | Phe | Leu | Arg | Asp 140 | Arg | Val | Ala | Val | Gly 145 | Ala | Asp | Ala | Phe | Glu 150 |
| Arg | Gly | Asp | Phe | Ser 155 | Leu | Arg | Ile | Glu | Pro 160 | Leu | Glu | Val | Ala | Asp 165 |
| Glu | Gly | Thr | Tyr | Ser 170 | Cys | His | Leu | His | His 175 | His | Tyr | Cys | Gly | Leu 180 |
| His | Glu | Arg | Arg | Val 185 | Phe | His | Leu | Thr | Val 190 | Ala | Glu | Pro | His | Ala 195 |
| Glu | Pro | Pro | Pro | Arg 200 | Gly | Ser | Pro | Gly | Asn 205 | Gly | Ser | Ser | His | Ser 210 |
| Gly | Ala | Pro | Gly | Pro 215 | Asp | Pro | Thr | Leu | Ala 220 | Arg | Gly | His | Asn | Val 225 |
| Ile | Asn | Val | Ile | Val 230 | Pro | Glu | Ser | Arg | Ala 235 | His | Phe | Phe | Gln | Gln 240 |
| Leu | Gly | Tyr | Val | Leu 245 | Ala | Thr | Leu | Leu | Leu 250 | Phe | Ile | Leu | Leu | Leu 255 |
| Val | Thr | Val | Leu | Leu 260 | Ala | Ala | Arg | Arg | Arg 265 | Arg | Gly | Gly | Tyr | Glu 270 |
| Tyr | Ser | Asp | Gln | Lys 275 | Ser | Gly | Lys | Ser | Lys 280 | Gly | Lys | Asp | Val | Asn 285 |
| Leu | Ala | Glu | Phe | Ala 290 | Val | Ala | Ala | Gly | Asp 295 | Gln | Met | Leu | Tyr | Arg 300 |
| Ser | Glu | Asp | Ile | Gln 305 | Leu | Asp | Tyr | Lys | Asn 310 | Asn | Ile | Leu | Lys | Glu 315 |
| Arg | Ala | Glu | Leu | Ala 320 | His | Ser | Pro | Leu | Pro 325 | Ala | Lys | Tyr | Ile | Asp 330 |
| Leu | Asp | Lys | Gly | Phe 335 | Arg | Lys | Glu | Asn | Cys 340 | Lys | | | | |

```
<210> 78
<211> 2243
<212> DNA
<213> Homo sapiens
```

<400> 78

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cagtctccga gctgaccagg aggcactgct tgagaagctg ctggaccgcc 150
cgccccctgg cctgcagagg cccgaggacc gcttctgtgg cacatacatc 200
atcttcttca gcctgggcat tggcagtcta ctgccatgga acttctttat 250
cactgccaag gactactgga tgttcaaact ccgcaactcc tccagcccag 300
ccaccgggga ggaccctgag ggctcagaca tcctgaacta ctttgagagc 350
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gacacttctt cctggaccgg tgggtttttt gcggtcacca ttgtctgcat 550
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cactgtggac caccaagttt ttcattcccc tctactacct cctcctgtac 1100
aactttgctg acctatgtgg ccggcagctc accgctgga tccaggtgcc 1150
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tatgtgtgct tgggcttaac actgggctca gcctgctcta ccctcctggt 1450

| | | | | | |
|------------|------------|-------------|------------|------------|------|
| gcacctcatc | tagaaggagg | gacacaagga | cattggtgct | tcagagcctt | 1500 |
| tgaagatgag | aagagagtgc | aggagggctg | ggggccatgg | aggaaaggcc | 1550 |
| taaagtttca | cttggggaca | gagagcagag | cacactcggg | cctcatccct | 1600 |
| cccaagatgc | cagtgagcca | cgtccatgcc | cattccgtgc | aaggcagata | 1650 |
| ttccagtcac | attaacagaa | cactcctgag | acagttgaag | aagaaatagc | 1700 |
| acaaatcagg | ggtactccct | tcacagctga | tggttaacat | tccaccttct | 1750 |
| ttctagccct | tcaaagatgc | tgccagtgtt | cgccctagag | ttattacaaa | 1800 |
| gccagtgcc | aaaccagcc | atgggctctt | tgcaacctcc | cagctgcgct | 1850 |
| cattccagct | gacagcgaga | tgcaagcaaa | tgctcagctc | tccttaccct | 1900 |
| gaaggggtct | ccctggaatg | gaagtcccct | ggcatggcca | gtcctcaggc | 1950 |
| ccaagactca | agtgtgcaca | gacccctgtg | ttctgcgggt | gaacaactgc | 2000 |
| ccactaacca | gactggaaaa | cccagaaaga | tgggccttcc | atgaatgctt | 2050 |
| cattccagag | ggaccagagg | gcctccctgt | gcaagggatc | aagcatgtct | 2100 |
| ggcctgggtt | ttcaaaaaaa | gagggatcct | catgacctgg | tggtctatgg | 2150 |
| cctgggtcaa | gatgagggtc | tttcagtgtt | cctgtttaca | acatgtcaaa | 2200 |
| gccattggtt | caagggcgta | ataaataactt | gcgtattcaa | aaa | 2243 |

```
<210> 79
<211> 475
<212> PRT
<213> Homo sapiens
```

```

<400> 79
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Thr Tyr Gly Thr Thr Ser Ser Ser Leu Arg Ala Asp Gln Glu Ala
          20          25          30

Leu Leu Glu Lys Leu Leu Asp Arg Pro Pro Pro Gly Leu Gln Arg
          35          40          45

Pro Glu Asp Arg Phe Cys Gly Thr Tyr Ile Ile Phe Phe Ser Leu
          50          55          60

Gly Ile Gly Ser Leu Leu Pro Trp Asn Phe Phe Ile Thr Ala Lys
          65          70          75

Glu Tyr Trp Met Phe Lys Leu Arg Asn Ser Ser Ser Pro Ala Thr
          80          85          90

Gly Glu Asp Pro Glu Gly Ser Asp Ile Leu Asn Tyr Phe Glu Ser
          95          100          105

```

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Leu | Ala | Val | Ala | Ser | Thr | Val | Pro | Ser | Met | Leu | Cys | Leu | Val | 110 | 115 | 120 |
| Ala | Asn | Phe | Leu | Leu | Val | Asn | Arg | Val | Ala | Val | His | Ile | Arg | Val | 125 | 130 | 135 |
| Leu | Ala | Ser | Leu | Thr | Val | Ile | Leu | Ala | Ile | Phe | Met | Val | Ile | Thr | 140 | 145 | 150 |
| Ala | Leu | Val | Lys | Val | Asp | Thr | Ser | Ser | Trp | Thr | Arg | Gly | Phe | Phe | 155 | 160 | 165 |
| Ala | Val | Thr | Ile | Val | Cys | Met | Val | Ile | Leu | Ser | Gly | Ala | Ser | Thr | 170 | 175 | 180 |
| Val | Phe | Ser | Ser | Ser | Ile | Tyr | Gly | Met | Thr | Gly | Ser | Phe | Pro | Met | 185 | 190 | 195 |
| Arg | Asn | Ser | Gln | Ala | Leu | Ile | Ser | Gly | Gly | Ala | Met | Gly | Gly | Thr | 200 | 205 | 210 |
| Val | Ser | Ala | Val | Ala | Ser | Leu | Val | Asp | Leu | Ala | Ala | Ser | Ser | Asp | 215 | 220 | 225 |
| Val | Arg | Asn | Ser | Ala | Leu | Ala | Phe | Phe | Leu | Thr | Ala | Thr | Ile | Phe | 230 | 235 | 240 |
| Leu | Val | Leu | Cys | Met | Gly | Leu | Tyr | Leu | Leu | Leu | Ser | Arg | Leu | Glu | 245 | 250 | 255 |
| Tyr | Ala | Arg | Tyr | Tyr | Met | Arg | Pro | Val | Leu | Ala | Ala | His | Val | Phe | 260 | 265 | 270 |
| Ser | Gly | Glu | Glu | Glu | Leu | Pro | Gln | Asp | Ser | Leu | Ser | Ala | Pro | Ser | 275 | 280 | 285 |
| Val | Ala | Ser | Arg | Phe | Ile | Asp | Ser | His | Thr | Pro | Pro | Leu | Arg | Pro | 290 | 295 | 300 |
| Ile | Leu | Lys | Lys | Thr | Ala | Ser | Leu | Gly | Phe | Cys | Val | Thr | Tyr | Val | 305 | 310 | 315 |
| Phe | Phe | Ile | Thr | Ser | Leu | Ile | Tyr | Pro | Ala | Val | Cys | Thr | Asn | Ile | 320 | 325 | 330 |
| Glu | Ser | Leu | Asn | Lys | Gly | Ser | Gly | Ser | Leu | Trp | Thr | Thr | Lys | Phe | 335 | 340 | 345 |
| Phe | Ile | Pro | Leu | Thr | Thr | Phe | Leu | Leu | Tyr | Asn | Phe | Ala | Asp | Leu | 350 | 355 | 360 |
| Cys | Gly | Arg | Gln | Leu | Thr | Ala | Trp | Ile | Gln | Val | Pro | Gly | Pro | Asn | 365 | 370 | 375 |
| Ser | Lys | Ala | Leu | Pro | Gly | Phe | Val | Leu | Leu | Arg | Thr | Cys | Leu | Ile | 380 | 385 | 390 |
| Pro | Leu | Phe | Val | Leu | Cys | Asn | Tyr | Gln | Pro | Arg | Val | His | Leu | Lys | | | |

[illegible]

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 395 | | | | | 400 | | | | | 405 |
| Thr | Val | Val | Phe | Gln 410 | Ser | Asp | Val | Tyr | Pro 415 | Ala | Leu | Leu | Ser | Ser 420 |
| Leu | Leu | Gly | Leu | Ser 425 | Asn | Gly | Tyr | Leu | Ser 430 | Thr | Leu | Ala | Leu | Leu 435 |
| Tyr | Gly | Pro | Lys | Ile 440 | Val | Pro | Arg | Glu | Leu 445 | Ala | Glu | Ala | Thr | Gly 450 |
| Val | Val | Met | Ser | Phe 455 | Tyr | Val | Cys | Leu | Gly 460 | Leu | Thr | Leu | Gly | Ser 465 |
| Ala | Cys | Ser | Thr | Leu 470 | Leu | Val | His | Leu | Ile 475 | | | | | |

```
<210> 80
<211> 22
<212> DNA
<213> Artificial
```

```
<220>
<221> Artificial sequence
<222> 1-22
<223> Synthetic construct.
```

```
<400> 80
      ttttgcggtc accattgtct gc 22
```

```
<210> 81
<211> 23
<212> DNA
<213> Homo sapiens
```

```
<220>  
<221> Artificial sequence  
<222> 1-23  
<223> Synthetic construct.
```

```
<400> 81
cgtaggtgac acagaagccc agg 23
```

```
<210> 82
<211> 49
<212> DNA
<213> Artificial
```

<220>
<221> Artificial sequence
<222> 1-49
<223> Synthetic construct.

<400> 82
tacggcatga ccggetcctt tccatgagg aactcccagg cactgatat 49

<210> 83
<211> 1844

[illegible]

| | | | | | |
|---|-----|--|-----|--|-----|
| | 455 | | 460 | | 465 |
| Lys Asp Asp Trp Thr Val Pro Tyr Gly Arg Ile Tyr Phe Ala Gly | 470 | | 475 | | 480 |
| Glu His Thr Ala Tyr Pro His Gly Trp Val Glu Thr Ala Val Lys | 485 | | 490 | | 495 |
| Ser Ala Leu Arg Ala Ala Ile Lys Ile Asn Ser Arg Lys Gly Pro | 500 | | 505 | | 510 |
| Ala Ser Asp Thr Ala Ser Pro Glu Gly His Ala Ser Asp Met Glu | 515 | | 520 | | 525 |
| Gly Gln Gly His Val His Gly Val Ala Ser Ser Pro Ser His Asp | 530 | | 535 | | 540 |
| Leu Ala Lys Glu Glu Gly Ser His Pro Pro Val Gln Gly Gln Leu | 545 | | 550 | | 555 |
| Ser Leu Gln Asn Thr Thr His Thr Arg Thr Ser His | 560 | | 565 | | |

<210> 85
 <211> 3316
 <212> DNA
 <213> Homo sapiens

<400> 85
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 tggaggaacc acgagcggag gaagaaggac agggactcgt gtggcaggaa 150
 gaactcagag ccgggaagcc cccattcact agaagcactg agagatgcgg 200
 cccctcgca gggctctgaat ttctgtctgc tgttcacaaa gatgcttttt 250
 atctttaact ttttgttttc cccacttccg accccggcgt tgatctgcat 300
 cctgacattt ggagctgcca tcttcttggt gctgatcacc agacctcaac 350
 ccgtcttacc tcttcttgac ctgaacaatc agtctgtggg aattgaggga 400
 ggagcacgga aggggggttc ccagaagaac aatgacctaa caagttgctg 450
 cttctcagat gccaaagacta tgtatgaggt tttccaaaga ggactcgctg 500
 tgtctgacaa tgggccctgc ttgggatata gaaaaccaa ccagccctac 550
 agatggctat cttacaaaca ggtgtctgat agagcagagt acctgggttc 600
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 acgtactcta tggtagctgt acctctgtat gacaccttgg gaccagaagc 750

catcgtacat attgtcaaca aggotgatat cgccatggtg atctgtgaca 800
cacccecaaaa ggcatgtgtg ctgataggga atgtagagaa aggcttcacc 850
ccgagcctga aggtgatcat ccttatggac ccctttgatg atgacctgaa 900
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tgaataatga aggagaggtc tgcacaaagg gtacaaacgt gttcaaagga 1750
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gcttcacaca ggagacattg gtcgctggct cccgaatgga actctgaaga 1850
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gcaccagaga agatagaaaa tatctacaac aggagtcaac cagtgttaca 1950
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agaagacttg cagaaaattg ggaaagaaag tggccttaaa acttttgaac 2150
aggtcaaagc catttttctt catccagagc cattttccat tgaaaatggg 2200

[illegible]

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------|
| | | | | 320 | | | | | | 325 | | | | 330 |
| His | Gln | Asn | Ile | Val 335 | Ser | Asn | Ala | Ala | Ala | Phe | Léu | Lys | Cys | Val 345 |
| Glu | His | Ala | Tyr | Glu 350 | Pro | Thr | Pro | Asp | Asp | Val | Ala | Ile | Ser | Tyr 360 |
| Leu | Pro | Leu | Ala | His 365 | Met | Phe | Glu | Arg | Ile | Val | Gln | Ala | Val | Val 375 |
| Tyr | Ser | Cys | Gly | Ala 380 | Arg | Val | Gly | Phe | Phe | Gln | Gly | Asp | Ile | Arg 390 |
| Leu | Leu | Ala | Asp | Asp 395 | Met | Lys | Thr | Leu | Lys | Pro | Thr | Leu | Phe | Pro 405 |
| Ala | Val | Pro | Arg | Leu 410 | Leu | Asn | Arg | Ile | Tyr | Asp | Lys | Val | Gln | Asn 420 |
| Glu | Ala | Lys | Thr | Pro 425 | Leu | Lys | Lys | Phe | Leu | Leu | Lys | Leu | Ala | Val 435 |
| Ser | Ser | Lys | Phe | Lys 440 | Glu | Leu | Gln | Lys | Gly | Ile | Ile | Arg | His | Asp 450 |
| Ser | Phe | Trp | Asp | Lys 455 | Leu | Ile | Phe | Ala | Lys | Ile | Gln | Asp | Ser | Leu 465 |
| Gly | Gly | Arg | Val | Arg 470 | Val | Ile | Val | Thr | Gly | Ala | Ala | Pro | Met | Ser 480 |
| Thr | Ser | Val | Met | Thr 485 | Phe | Phe | Arg | Ala | Ala | Met | Gly | Cys | Gln | Val 495 |
| Tyr | Glu | Ala | Tyr | Gly 500 | Gln | Thr | Glu | Cys | Thr | Gly | Gly | Cys | Thr | Phe 510 |
| Thr | Leu | Pro | Gly | Asp 515 | Trp | Thr | Ser | Gly | His | Val | Gly | Val | Pro | Leu 525 |
| Ala | Cys | Asn | Tyr | Val 530 | Lys | Leu | Glu | Asp | Val | Ala | Asp | Met | Asn | Tyr 540 |
| Phe | Thr | Val | Asn | Asn 545 | Glu | Gly | Glu | Val | Cys | Ile | Lys | Gly | Thr | Asn 555 |
| Val | Phe | Lys | Gly | Tyr 560 | Leu | Lys | Asp | Pro | Glu | Lys | Thr | Gln | Glu | Ala 570 |
| Leu | Asp | Ser | Asp | Gly 575 | Trp | Leu | His | Thr | Gly | Asp | Ile | Gly | Arg | Trp 585 |
| Leu | Pro | Asn | Gly | Thr 590 | Leu | Lys | Ile | Ile | Asp | Arg | Lys | Lys | Asn | Ile 600 |
| Phe | Lys | Leu | Ala | Gln 605 | Gly | Glu | Tyr | Ile | Ala | Pro | Glu | Lys | Ile | Glu 615 |

Asn Ile Tyr Asn Arg Ser Gln Pro Val Leu Gln Ile Phe Val His
620 625 630
Gly Glu Ser Leu Arg Ser Ser Leu Val Gly Val Val Val Pro Asp
635 640 645
Thr Asp Val Leu Pro Ser Phe Ala Ala Lys Leu Gly Val Lys Gly
650 655 660
Ser Phe Glu Glu Leu Cys Gln Asn Gln Val Val Arg Glu Ala Ile
665 670 675
Leu Glu Asp Leu Gln Lys Ile Gly Lys Glu Ser Gly Leu Lys Thr
680 685 690
Phe Glu Gln Val Lys Ala Ile Phe Leu His Pro Glu Pro Phe Ser
695 700 705
Ile Glu Asn Gly Leu Leu Thr Pro Thr Leu Lys Ala Lys Arg Gly
710 715 720
Glu Leu Ser Lys Tyr Phe Arg Thr Gln Ile Asp Ser Leu Tyr Glu
725 730 735
His Ile Gln Asp

<210> 87
<211> 2725
<212> DNA
<213> Homo sapiens

<400> 87
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cccctcatca agcccttttg ggctcggaag aagcggagct ggtaccttac 200
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caggggccgt gcttttctct ctggtgactg tcattgtcaa tatcaagttg 300
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agcaaagtat atgtggcagt ggatggcacc acggtgctgg aggatgaggc 500
ccgggagcag ggccggggca tccatgtcat tgctctcaac caggccacgg 550
gccacgtgat ggcaaacgt gtgtttgaca cgtactcacc tcatgaggat 600
gaggccatgg tgctattcct caacatggta gcgcccggcc gagtgtcat 650

| | | | | | |
|-------------|-------------|-------------|------------|-------------|------|
| ctgcactgtc | aaggatgagg | gtccttcca | cctcaaggac | acagccaagg | 700 |
| ctctgctgag | gagcctgggc | agccaggctg | gccctgccct | gggctggagg | 750 |
| gacacatggg | ccttcgtggg | acgaaaagga | ggctctgtct | tcggggagaa | 800 |
| acatttctaag | tcacctgccc | tctcttctctg | gggggaccca | gtcctgtctga | 850 |
| agacagatgt | gccattgagc | tcagcagaag | aggcagagtg | ccactgggca | 900 |
| gacacagagc | tgaaccgtcg | ccgccggcgc | ttctgcagca | aagttgaggg | 950 |
| ctatggaagt | gtatgcagct | gcaaggaccc | cacacccatc | gagttcagcc | 1000 |
| ctgacccact | cccagacaac | aaggctctca | atgtgcctgt | ggctgtcatt | 1050 |
| gcagggaacc | gaccaatta | cctgtacagg | atgtgcgct | ctctgctttc | 1100 |
| agcccagggg | gtgtctctc | agatgataac | agttttcatt | gacggctact | 1150 |
| atgaggaacc | catggatgtg | gtggcactgt | ttggtctgag | gggcatccag | 1200 |
| catactccca | tcagcatcaa | gaatgcccg | gtgtctcagc | actacaaggc | 1250 |
| cagcctcact | gccactttca | acctgtttcc | ggaggccaag | tttgctgtgg | 1300 |
| ttctggaaga | ggacctggac | attgctgtgg | attttttcag | tttctgagc | 1350 |
| caatccatcc | acctactgga | ggaggatgac | agcctgtact | gcactctctgc | 1400 |
| ctggaatgac | cagggggtatg | aacacacggc | tgaggacca | gcactactgt | 1450 |
| accgtgtgga | gaccatgcct | gggctgggct | gggtgctcag | gaggtccttg | 1500 |
| tacaaggagg | agcttgagcc | caagtggcct | acaccgaaa | agctctggga | 1550 |
| ttgggacatg | tggatgcgga | tgctgaaca | acgccggggc | cgagagtgca | 1600 |
| tcatccctga | cgtttccga | tcctaccact | ttggcatcgt | cggcctcaac | 1650 |
| atgaatggct | actttcacga | ggcctacttc | aagaagcaca | agttcaacac | 1700 |
| ggttcaggt | gtccagctca | ggaatgtgga | cagtctgaag | aaagaagctt | 1750 |
| atgaagtgga | agttcacagg | ctgctcagtg | aggctgaggt | tctggaccac | 1800 |
| agcaagaacc | cttgtgaaga | ctctttctctg | ccagacacag | agggccacac | 1850 |
| ctacgtggcc | tttattcgaa | tggagaaaaga | tgatgacttc | accacctgga | 1900 |
| cccagcttgc | caagtgcctc | catatctggg | acctggatgt | gcgtggcaac | 1950 |
| catcggggcc | tgtggagatt | gtttcggaag | aagaaccact | tcctggtggt | 2000 |
| gggggtcccg | gcttccccct | actcagtga | gaagccaccc | tcagtcaccc | 2050 |
| caatttttct | ggagccaccc | ccaaaggagg | agggagcccc | aqgaqcccca | 2100 |

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 aaaaaaaaaa aaaaaaaaaa aaaaa 2725

<210> 88
 <211> 660
 <212> PRT
 <213> Homo sapiens

<400> 88
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 35 40 45
 Phe Leu Leu Val Thr Val Ile Val Asn Ile Lys Leu Ile Leu Asp
 50 55 60
 Thr Arg Arg Ala Ile Ser Glu Ala Asn Glu Asp Pro Glu Pro Glu
 65 70 75
 Gln Asp Tyr Asp Glu Ala Leu Gly Arg Leu Glu Pro Pro Arg Arg
 80 85 90
 Arg Gly Ser Gly Pro Arg Arg Val Leu Asp Val Glu Val Tyr Ser
 95 100 105
 Ser Arg Ser Lys Val Tyr Val Ala Val Asp Gly Thr Thr Val Leu
 110 115 120
 Glu Asp Glu Ala Arg Glu Gln Gly Arg Gly Ile His Val Ile Val
 125 130 135

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Asn | Gln | Ala | Thr | Gly | His | Val | Met | Ala | Lys | Arg | Val | Phe | Asp | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Thr | Tyr | Ser | Pro | His | Glu | Asp | Glu | Ala | Met | Val | Leu | Phe | Leu | Asn | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Met | Val | Ala | Pro | Gly | Arg | Val | Leu | Ile | Cys | Thr | Val | Lys | Asp | Glu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gly | Ser | Phe | His | Leu | Lys | Asp | Thr | Ala | Lys | Ala | Leu | Leu | Arg | Ser | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | Gly | Ser | Gln | Ala | Gly | Pro | Ala | Leu | Gly | Trp | Arg | Asp | Thr | Trp | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ala | Phe | Val | Gly | Arg | Lys | Gly | Gly | Pro | Val | Phe | Gly | Glu | Lys | His | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ser | Lys | Ser | Pro | Ala | Leu | Ser | Ser | Trp | Gly | Asp | Pro | Val | Leu | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Lys | Thr | Asp | Val | Pro | Leu | Ser | Ser | Ala | Glu | Glu | Ala | Glu | Cys | His | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Trp | Ala | Asp | Thr | Glu | Leu | Asn | Arg | Arg | Arg | Arg | Arg | Phe | Cys | Ser | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Lys | Val | Glu | Gly | Tyr | Gly | Ser | Val | Cys | Ser | Cys | Lys | Asp | Pro | Thr | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Pro | Ile | Glu | Phe | Ser | Pro | Asp | Pro | Leu | Pro | Asp | Asn | Lys | Val | Leu | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Asn | Val | Pro | Val | Ala | Val | Ile | Ala | Gly | Asn | Arg | Pro | Asn | Tyr | Leu | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Tyr | Arg | Met | Leu | Arg | Ser | Leu | Leu | Ser | Ala | Gln | Gly | Val | Ser | Pro | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Gln | Met | Ile | Thr | Val | Phe | Ile | Asp | Gly | Tyr | Tyr | Glu | Glu | Pro | Met | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Asp | Val | Val | Ala | Leu | Phe | Gly | Leu | Arg | Gly | Ile | Gln | His | Thr | Pro | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Ile | Ser | Ile | Lys | Asn | Ala | Arg | Val | Ser | Gln | His | Tyr | Lys | Ala | Ser | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Leu | Thr | Ala | Thr | Phe | Asn | Leu | Phe | Pro | Glu | Ala | Lys | Phe | Ala | Val | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Val | Leu | Glu | Glu | Asp | Leu | Asp | Ile | Ala | Val | Asp | Phe | Phe | Ser | Phe | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Leu | Ser | Gln | Ser | Ile | His | Leu | Leu | Glu | Glu | Asp | Asp | Ser | Leu | Tyr | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Cys | Ile | Ser | Ala | Trp | Asn | Asp | Gln | Gly | Tyr | Glu | His | Thr | Ala | Glu | |

| 425 | | | | | 430 | | | | | 435 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Pro | Ala | Leu | Leu | Tyr | Arg | Val | Glu | Thr | Met | Pro | Gly | Leu | Gly |
| | | | 440 | | | | | | 445 | | | | | 450 |
| Trp | Val | Leu | Arg | Arg | Ser | Leu | Tyr | Lys | Glu | Glu | Leu | Glu | Pro | Lys |
| | | | 455 | | | | | | 460 | | | | | 465 |
| Trp | Pro | Thr | Pro | Glu | Lys | Leu | Trp | Asp | Trp | Asp | Met | Trp | Met | Arg |
| | | | 470 | | | | | | 475 | | | | | 480 |
| Met | Pro | Glu | Gln | Arg | Arg | Gly | Arg | Glu | Cys | Ile | Ile | Pro | Asp | Val |
| | | | 485 | | | | | | 490 | | | | | 495 |
| Ser | Arg | Ser | Tyr | His | Phe | Gly | Ile | Val | Gly | Leu | Asn | Met | Asn | Gly |
| | | | 500 | | | | | | 505 | | | | | 510 |
| Tyr | Phe | His | Glu | Ala | Tyr | Phe | Lys | Lys | His | Lys | Phe | Asn | Thr | Val |
| | | | 515 | | | | | | 520 | | | | | 525 |
| Pro | Gly | Val | Gln | Leu | Arg | Asn | Val | Asp | Ser | Leu | Lys | Lys | Glu | Ala |
| | | | 530 | | | | | | 535 | | | | | 540 |
| Tyr | Glu | Val | Glu | Val | His | Arg | Leu | Leu | Ser | Glu | Ala | Glu | Val | Leu |
| | | | 545 | | | | | | 550 | | | | | 555 |
| Asp | His | Ser | Lys | Asn | Pro | Cys | Glu | Asp | Ser | Phe | Leu | Pro | Asp | Thr |
| | | | 560 | | | | | | 565 | | | | | 570 |
| Glu | Gly | His | Thr | Tyr | Val | Ala | Phe | Ile | Arg | Met | Glu | Lys | Asp | Asp |
| | | | 575 | | | | | | 580 | | | | | 585 |
| Asp | Phe | Thr | Thr | Trp | Thr | Gln | Leu | Ala | Lys | Cys | Leu | His | Ile | Trp |
| | | | 590 | | | | | | 595 | | | | | 600 |
| Asp | Leu | Asp | Val | Arg | Gly | Asn | His | Arg | Gly | Leu | Trp | Arg | Leu | Phe |
| | | | 605 | | | | | | 610 | | | | | 615 |
| Arg | Lys | Lys | Asn | His | Phe | Leu | Val | Val | Gly | Val | Pro | Ala | Ser | Pro |
| | | | 620 | | | | | | 625 | | | | | 630 |
| Tyr | Ser | Val | Lys | Lys | Pro | Pro | Ser | Val | Thr | Pro | Ile | Phe | Leu | Glu |
| | | | 635 | | | | | | 640 | | | | | 645 |
| Pro | Pro | Pro | Lys | Glu | Glu | Gly | Ala | Pro | Gly | Ala | Pro | Glu | Gln | Thr |
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<210> 89

<211> 25

<212> DNA

<213> Artificial

<220>

<221> Artificial sequence

<222> 1-25

<223> Synthetic construct.

<400> 89

gatggcaaaa cgtgtgtttg acacg 25

<210> 90

<211> 22

<212> DNA

<213> Artificial

<220>

<221> Artificial sequence

<222> 1-22

<223> Synthetic construct.

<400> 90

cctcaaccag gccacgggcc ac 22

<210> 91

<211> 24

<212> DNA

<213> Artificial

<220>

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<222> 1-24

<223> Synthetic construct.

<400> 91

cccaggcaga gatgcagtac aggc 24

<210> 92

<211> 26

<212> DNA

<213> Artificial

<220>

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<222> 1-26

<223> Synthetic construct.

<400> 92

cctccagtag gtggatggat tggctc 26

<210> 93

<211> 47

<212> DNA

<213> Artificial

<220>

<221> Artificial sequence

<222> 1-47

<223> Synthetic construct.

<400> 93

ctcacctcat gaggatgagg ccatggtgct attcctcaac atggtag 47

<210> 94

<211> 3037

<212> DNA

<213> Homo sapiens

<400> 94

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actggaaatt tgttgcttag tgggtgtggg tgaataaagg agggcagaat 150
ggatgatttc atctccatta gcctgctgtc tctggctatg ttggtgggat 200
gttacgtggc cggaatcatt cccttggtg ttaatttctc agaggaacga 250
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aaagcagcag aaaaatcagt tgtccatgaa catgagcaca gccacgacca 450
cacacagctg catgcctata ttggtgtttc cctcgcttctg ggcttcgttt 500
tcatgtttgt ggtggaccag attggtaact cccatgtgca ttctactgac 550
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 ttgtcaaata aatagcagat tgtagtgtca aaaaaaa 3037

<210> 95
 <211> 307
 <212> PRT
 <213> Homo sapiens

<400> 95
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 20 25 30
 Ser Glu Glu Arg Leu Lys Leu Val Thr Val Leu Gly Ala Gly Leu
 35 40 45
 Leu Cys Gly Thr Ala Leu Ala Val Ile Val Pro Glu Gly Val His
 50 55 60
 Ala Leu Tyr Glu Asp Ile Leu Glu Gly Lys His His Gln Ala Ser
 65 70 75
 Glu Thr His Asn Val Ile Ala Ser Asp Lys Ala Ala Glu Lys Ser
 80 85 90
 Val Val His Glu His Glu His Ser His Asp His Thr Gln Leu His
 95 100 105
 Ala Tyr Ile Gly Val Ser Leu Val Leu Gly Phe Val Phe Met Leu
 110 115 120
 Leu Val Asp Gln Ile Gly Asn Ser His Val His Ser Thr Asp Asp
 125 130 135
 Pro Glu Ala Ala Arg Ser Ser Asn Ser Lys Ile Thr Thr Thr Leu
 140 145 150
 Gly Leu Val Val His Ala Ala Ala Asp Gly Val Ala Leu Gly Ala
 155 160 165
 Ala Ala Ser Thr Ser Gln Thr Ser Val Gln Leu Ile Val Phe Val
 170 175 180
 Ala Ile Met Leu His Lys Ala Pro Ala Ala Phe Gly Leu Val Ser
 185 190 195
 Phe Leu Met His Ala Gly Leu Glu Arg Asn Arg Ile Arg Lys His
 200 205 210
 Leu Leu Val Phe Ala Leu Ala Ala Pro Val Met Ser Met Val Thr
 215 220 225
 Tyr Leu Gly Leu Ser Lys Ser Ser Lys Glu Ala Leu Ser Glu Val

| | | |
|-------------------------------------|---------------------|-----|
| 230 | 235 | 240 |
| Asn Ala Thr Gly Val Ala Met Leu Phe | Ser Ala Gly Thr Phe | Leu |
| 245 | 250 | 255 |
| Tyr Val Ala Thr Val His Val Leu Pro | Glu Val Gly Gly Ile | Gly |
| 260 | 265 | 270 |
| His Ser His Lys Pro Asp Ala Thr Gly | Gly Arg Gly Leu Ser | Arg |
| 275 | 280 | 285 |
| Leu Glu Val Ala Ala Leu Val Leu Gly | Cys Leu Ile Pro Leu | Ile |
| 290 | 295 | 300 |

Leu Ser Val Gly His Gln His
305

<210> 96
<211> 25
<212> DNA
<213> Artificial

<220>
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<222> 1-25
<223> Synthetic construct.

<400> 96
gttgtgggtg aataaaggag ggcag 25

<210> 97
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-25
<223> Synthetic construct.

<400> 97
ctgtgctcat gttcatggac aactg 25

<210> 98
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-50
<223> Synthetic construct.

<400> 98
ggatgatttc atctccatta gcctgctgtc tctggctatg ttggtgggat 50

<210> 99
<211> 1429

(Musical notation for the first system of the score)

gaaatgtact aaataaaatg tacatctga 1429

<210> 100

<211> 401

<212> PRT

<213> Homo sapiens

<400> 100

Met Met Gly Leu Gly Asn Gly Arg Arg Ser Met Lys Ser Pro Pro
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Leu Val Leu Ala Ala Leu Val Ala Cys Ile Ile Val Leu Gly Phe
20 25 30

Asn Tyr Trp Ile Ala Ser Ser Arg Ser Val Asp Leu Gln Thr Arg
35 40 45

Ile Met Glu Leu Glu Gly Arg Val Arg Arg Ala Ala Ala Glu Arg
50 55 60

Gly Ala Val Glu Leu Lys Lys Asn Glu Phe Gln Gly Glu Leu Glu
65 70 75

Lys Gln Arg Glu Gln Leu Asp Lys Ile Gln Ser Ser His Asn Phe
80 85 90

Gln Leu Glu Ser Val Asn Lys Leu Tyr Gln Asp Glu Lys Ala Val
95 100 105

```

Leu Val Asn Asn Ile Thr Thr Gly Glu Arg Leu Ile Arg Val Leu
      110                      115                      120

```

Gln Asp Gln Leu Lys Thr Leu Gln Arg Asn Tyr Gly Arg Leu Gln
125 130 135

Gln Asp Val Leu Gln Phe Gln Lys Asn Gln Thr Asn Leu Glu Arg
140 145 150

Lys Phe Ser Tyr Asp Leu Ser Gln Cys Ile Asn Gln Met Lys Glu
155 160 165

Val Lys Glu Gln Cys Glu Glu Arg Ile Glu Glu Val Thr Lys Lys
170 175 180

Gly Asn Glu Ala Val Ala Ser Arg Asp Leu Ser Glu Asn Asn Asp
185 190 195

Gln Arg Gln Gln Leu Gln Ala Leu Ser Glu Pro Gln Pro Arg Leu
200 205 210

Gln Ala Ala Gly Leu Pro His Thr Glu Val Pro Gln Gly Lys Gly
215 220 225

Asn Val Leu Gly Asn Ser Lys Ser Gln Thr Pro Ala Pro Ser Ser
230 235 240

Glu Val Val Leu Asp Ser Lys Arg Gln Val Glu Lys Glu Glu Thr
245 250 255

Asn Glu Ile Gln Val Val Asn Glu Glu Pro Gln Arg Asp Arg Leu
260 265 270

Pro Gln Glu Pro Gly Arg Glu Gln Val Val Glu Asp Arg Pro Val
275 280 285

Gly Gly Arg Gly Phe Gly Gly Ala Gly Glu Leu Gly Gln Thr Pro
290 295 300

Gln Val Gln Ala Ala Leu Ser Val Ser Gln Glu Asn Pro Glu Met
305 310 315

Glu Gly Pro Glu Arg Asp Gln Leu Val Ile Pro Asp Gly Gln Glu
320 325 330

Glu Glu Gln Glu Ala Ala Gly Glu Gly Arg Asn Gln Gln Lys Leu
335 340 345

Arg Gly Glu Asp Asp Tyr Asn Met Asp Glu Asn Glu Ala Glu Ser
350 355 360

Glu Thr Asp Lys Gln Ala Ala Leu Ala Gly Asn Asp Arg Asn Ile
365 370 375

Asp Val Phe Asn Val Glu Asp Gln Lys Arg Asp Thr Ile Asn Leu
380 385 390

Leu Asp Gln Arg Glu Lys Arg Asn His Thr Leu
395 400

<210> 101
<211> 3671
<212> DNA
<213> Homo sapiens

<400> 101
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tgccatgggg gagccaaggg aaacctgggg cctgctggat ggcttcccg 200
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tcctgggcaa actaagctcc ttgcagagga tcctggagat tcagccccac 350
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<210> 102

<211> 1089

<212> PRT

<213> Homo sapiens

<400> 102

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gln | Lys | Ala | Ser | Val | Leu | Leu | Phe | Leu | Ala | Trp | Val | Cys | Phe | 1 | 5 | 10 | 15 |
| Leu | Phe | Tyr | Ala | Gly | Ile | Ala | Leu | Phe | Thr | Ser | Gly | Phe | Leu | Leu | 20 | 25 | 30 | |
| Thr | Arg | Leu | Glu | Leu | Thr | Asn | His | Ser | Ser | Cys | Gln | Glu | Pro | Pro | 35 | 40 | 45 | |
| Gly | Pro | Gly | Ser | Leu | Pro | Trp | Gly | Ser | Gln | Gly | Lys | Pro | Gly | Ala | 50 | 55 | 60 | |
| Cys | Trp | Met | Ala | Ser | Arg | Phe | Ser | Arg | Val | Val | Leu | Val | Leu | Ile | 65 | 70 | 75 | |
| Asp | Ala | Leu | Arg | Phe | Asp | Phe | Ala | Gln | Pro | Gln | His | Ser | His | Val | 80 | 85 | 90 | |
| Pro | Arg | Glu | Pro | Pro | Val | Ser | Leu | Pro | Phe | Leu | Gly | Lys | Leu | Ser | 95 | 100 | 105 | |
| Ser | Leu | Gln | Arg | Ile | Leu | Glu | Ile | Gln | Pro | His | His | Ala | Arg | Leu | 110 | 115 | 120 | |
| Tyr | Arg | Ser | Gln | Val | Asp | Pro | Pro | Thr | Thr | Thr | Met | Gln | Arg | Leu | 125 | 130 | 135 | |
| Lys | Ala | Leu | Thr | Thr | Gly | Ser | Leu | Pro | Thr | Phe | Ile | Asp | Ala | Gly | 140 | 145 | 150 | |
| Ser | Asn | Phe | Ala | Ser | His | Ala | Ile | Val | Glu | Asp | Asn | Leu | Ile | Lys | 155 | 160 | 165 | |
| Gln | Leu | Thr | Ser | Ala | Gly | Arg | Arg | Val | Val | Phe | Met | Gly | Asp | Asp | 170 | 175 | 180 | |
| Thr | Trp | Lys | Asp | Leu | Phe | Pro | Gly | Ala | Phe | Ser | Lys | Ala | Phe | Phe | 185 | 190 | 195 | |
| Phe | Pro | Ser | Phe | Asn | Val | Arg | Asp | Leu | Asp | Thr | Val | Asp | Asn | Gly | | | | |

| 200 | 205 | 210 |
|-------------------------------------|-------------------------|-----|
| Ile Leu Glu His Leu Tyr Pro Thr Met | Asp Ser Gly Glu Trp Asp | |
| 215 | 220 | 225 |
| Val Leu Ile Ala His Phe Leu Gly Val | Asp His Cys Gly His Lys | |
| 230 | 235 | 240 |
| His Gly Pro His His Pro Glu Met Ala | Lys Lys Leu Ser Gln Met | |
| 245 | 250 | 255 |
| Asp Gln Val Ile Gln Gly Leu Val Glu | Arg Leu Glu Asn Asp Thr | |
| 260 | 265 | 270 |
| Leu Leu Val Val Ala Gly Asp His Gly | Met Thr Thr Asn Gly Asp | |
| 275 | 280 | 285 |
| His Gly Gly Asp Ser Glu Leu Glu Val | Ser Ala Ala Leu Phe Leu | |
| 290 | 295 | 300 |
| Tyr Ser Pro Thr Ala Val Phe Pro Ser | Thr Pro Pro Glu Glu Pro | |
| 305 | 310 | 315 |
| Glu Val Ile Pro Gln Val Ser Leu Val | Pro Thr Leu Ala Leu Leu | |
| 320 | 325 | 330 |
| Leu Gly Leu Pro Ile Pro Phe Gly Asn | Ile Gly Glu Val Met Ala | |
| 335 | 340 | 345 |
| Glu Leu Phe Ser Gly Gly Glu Asp Ser | Gln Pro His Ser Ser Ala | |
| 350 | 355 | 360 |
| Leu Ala Gln Ala Ser Ala Leu His Leu | Asn Ala Gln Gln Val Ser | |
| 365 | 370 | 375 |
| Arg Phe Leu His Thr Tyr Ser Ala Ala | Thr Gln Asp Leu Gln Ala | |
| 380 | 385 | 390 |
| Lys Glu Leu His Gln Leu Gln Asn Leu | Phe Ser Lys Ala Ser Ala | |
| 395 | 400 | 405 |
| Asp Tyr Gln Trp Leu Leu Gln Ser Pro | Lys Gly Ala Glu Ala Thr | |
| 410 | 415 | 420 |
| Leu Pro Thr Val Ile Ala Glu Leu Gln | Gln Phe Leu Arg Gly Ala | |
| 425 | 430 | 435 |
| Arg Ala Met Cys Ile Glu Ser Trp Ala | Arg Phe Ser Leu Val Arg | |
| 440 | 445 | 450 |
| Met Ala Gly Gly Thr Ala Leu Leu Ala | Ala Ser Cys Phe Ile Cys | |
| 455 | 460 | 465 |
| Leu Leu Ala Ser Gln Trp Ala Ile Ser | Pro Gly Phe Pro Phe Cys | |
| 470 | 475 | 480 |
| Pro Leu Leu Leu Thr Pro Val Ala Trp | Gly Leu Val Gly Ala Ile | |
| 485 | 490 | 495 |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Ala Tyr Ala Gly | Leu Leu Gly Thr Ile | Glu Leu Lys Leu Asp | Leu |
| 500 | | 505 | 510 |
| Val Leu Leu Gly | Ala Val Ala Ala Val | Ser Ser Phe Leu Pro | Phe |
| 515 | | 520 | 525 |
| Leu Trp Lys Ala | Trp Ala Gly Trp Gly | Ser Lys Arg Pro Leu | Ala |
| 530 | | 535 | 540 |
| Thr Leu Phe Pro | Ile Pro Gly Pro Val | Leu Leu Leu Leu Leu | Phe |
| 545 | | 550 | 555 |
| Arg Leu Ala Val | Phe Phe Ser Asp Ser | Phe Val Val Ala Glu | Ala |
| 560 | | 565 | 570 |
| Arg Ala Thr Pro | Phe Leu Leu Gly Ser | Phe Ile Leu Leu Leu | Val |
| 575 | | 580 | 585 |
| Val Gln Leu His | Trp Glu Gly Gln Leu | Leu Pro Pro Lys Leu | Leu |
| 590 | | 595 | 600 |
| Thr Met Pro Arg | Leu Gly Thr Ser Ala | Thr Thr Asn Pro Pro | Arg |
| 605 | | 610 | 615 |
| His Asn Gly Ala | Tyr Ala Leu Arg Leu | Gly Ile Gly Leu Leu | Leu |
| 620 | | 625 | 630 |
| Cys Thr Arg Leu | Ala Gly Leu Phe His | Arg Cys Pro Glu Glu | Thr |
| 635 | | 640 | 645 |
| Pro Val Cys His | Ser Ser Pro Trp Leu | Ser Pro Leu Ala Ser | Met |
| 650 | | 655 | 660 |
| Val Gly Gly Arg | Ala Lys Asn Leu Trp | Tyr Gly Ala Cys Val | Ala |
| 665 | | 670 | 675 |
| Ala Leu Val Ala | Leu Leu Ala Ala Val | Arg Leu Trp Leu Arg | Arg |
| 680 | | 685 | 690 |
| Tyr Gly Asn Leu | Lys Ser Pro Glu Pro | Pro Met Leu Phe Val | Arg |
| 695 | | 700 | 705 |
| Trp Gly Leu Pro | Leu Met Ala Leu Gly | Thr Ala Ala Tyr Trp | Ala |
| 710 | | 715 | 720 |
| Leu Ala Ser Gly | Ala Asp Glu Ala Pro | Pro Arg Leu Arg Val | Leu |
| 725 | | 730 | 735 |
| Val Ser Gly Ala | Ser Met Val Leu Pro | Arg Ala Val Ala Gly | Leu |
| 740 | | 745 | 750 |
| Ala Ala Ser Gly | Leu Ala Leu Leu Leu | Trp Lys Pro Val Thr | Val |
| 755 | | 760 | 765 |
| Leu Val Lys Ala | Gly Ala Gly Ala Pro | Arg Thr Arg Thr Val | Leu |
| 770 | | 775 | 780 |
| Thr Pro Phe Ser | Gly Pro Pro Thr Ser | Gln Ala Asp Leu Asp | Tyr |

| 785 | | | | | | | | | 790 | | | | 795 | | |
|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|--|
| Val | Val | Pro | Gln | Ile 800 | Tyr | Arg | His | Met | Gln 805 | Glu | Glu | Phe | Arg | Gly 810 | |
| Arg | Leu | Glu | Arg | Thr 815 | Lys | Ser | Gln | Gly | Pro 820 | Leu | Thr | Val | Ala | Ala 825 | |
| Tyr | Gln | Leu | Gly | Ser 830 | Val | Tyr | Ser | Ala | Ala 835 | Met | Val | Thr | Ala | Leu 840 | |
| Thr | Leu | Leu | Ala | Phe 845 | Pro | Leu | Leu | Leu | Leu 850 | His | Ala | Glu | Arg | Ile 855 | |
| Ser | Leu | Val | Phe | Leu 860 | Leu | Leu | Phe | Leu | Gln 865 | Ser | Phe | Leu | Leu | Leu 870 | |
| His | Leu | Leu | Ala | Ala 875 | Gly | Ile | Pro | Val | Thr 880 | Thr | Pro | Gly | Pro | Phe 885 | |
| Thr | Val | Pro | Trp | Gln 890 | Ala | Val | Ser | Ala | Trp 895 | Ala | Leu | Met | Ala | Thr 900 | |
| Gln | Thr | Phe | Tyr | Ser 905 | Thr | Gly | His | Gln | Pro 910 | Val | Phe | Pro | Ala | Ile 915 | |
| His | Trp | His | Ala | Ala 920 | Phe | Val | Gly | Phe | Pro 925 | Glu | Gly | His | Gly | Ser 930 | |
| Cys | Thr | Trp | Leu | Pro 935 | Ala | Leu | Leu | Val | Gly 940 | Ala | Asn | Thr | Phe | Ala 945 | |
| Ser | His | Leu | Leu | Phe 950 | Ala | Val | Gly | Cys | Pro 955 | Leu | Leu | Leu | Leu | Trp 960 | |
| Pro | Phe | Leu | Cys | Glu 965 | Ser | Gln | Gly | Leu | Arg 970 | Lys | Arg | Gln | Gln | Pro 975 | |
| Pro | Gly | Asn | Glu | Ala 980 | Asp | Ala | Arg | Val | Arg 985 | Pro | Glu | Glu | Glu | Glu 990 | |
| Glu | Pro | Leu | Met | Glu 995 | Met | Arg | Leu | Arg | Asp 1000 | Ala | Pro | Gln | His | Phe 1005 | |
| Tyr | Ala | Ala | Leu | Leu 1010 | Gln | Leu | Gly | Leu | Lys 1015 | Tyr | Leu | Phe | Ile | Leu 1020 | |
| Gly | Ile | Gln | Ile | Leu 1025 | Ala | Cys | Ala | Leu | Ala 1030 | Ala | Ser | Ile | Leu | Arg 1035 | |
| Arg | His | Leu | Met | Val 1040 | Trp | Lys | Val | Phe | Ala 1045 | Pro | Lys | Phe | Ile | Phe 1050 | |
| Glu | Ala | Val | Gly | Phe 1055 | Ile | Val | Ser | Ser | Val 1060 | Gly | Leu | Leu | Leu | Gly 1065 | |
| Ile | Ala | Leu | Val | Met 1070 | Arg | Val | Asp | Gly | Ala 1075 | Val | Ser | Ser | Trp | Phe 1080 | |

gctgtgtatt ccttcgctgt ccagcttcga ccaggattca gagggctgcg 1300
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 tatgaggagc cggctccaga caggccacca ggagaaaatg aaacctatct 1400
 catgcaattc atggaggaat gggggttata tgtgcagatg gaaaactgat 1450
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 <211> 442
 <212> PRT
 <213> Homo sapiens

<400> 104
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 Val Ala Leu Thr Thr Asp Glu Lys Ser Ile Ser Val Val Leu Thr
 35 40 45
 Ala Pro Glu Lys Trp Lys Arg Asn Pro Glu Asp Leu Pro Val Ser
 50 55 60
 Met Gln Gln Ile Tyr Ser Asn Leu Lys Tyr Asn Val Ser Val Leu
 65 70 75
 Asn Thr Lys Ser Asn Arg Thr Trp Ser Gln Cys Val Thr Asn His
 80 85 90
 Thr Leu Val Leu Thr Trp Leu Glu Pro Asn Thr Leu Tyr Cys Val
 95 100 105
 His Val Glu Ser Phe Val Pro Gly Pro Pro Arg Arg Ala Gln Pro
 110 115 120
 Ser Glu Lys Gln Cys Ala Arg Thr Leu Lys Asp Gln Ser Ser Glu
 125 130 135
 Phe Lys Ala Lys Ile Ile Phe Trp Tyr Val Leu Pro Ile Ser Ile
 140 145 150
 Thr Val Phe Leu Phe Ser Val Met Gly Tyr Ser Ile Tyr Arg Tyr
 155 160 165

Ile His Val Gly Lys Glu Lys His Pro Ala Asn Leu Ile Leu Ile
170 175 180

Tyr Gly Asn Glu Phe Asp Lys Arg Phe Phe Val Pro Ala Glu Lys
185 190 195

Ile Val Ile Asn Phe Ile Thr Leu Asn Ile Ser Asp Asp Ser Lys
200 205 210

Ile Ser His Gln Asp Met Ser Leu Leu Gly Lys Ser Ser Asp Val
215 220 225

Ser Ser Leu Asn Asp Pro Gln Pro Ser Gly Asn Leu Arg Pro Pro
230 235 240

Gln Glu Glu Glu Glu Val Lys His Leu Gly Tyr Ala Ser His Leu
245 250 255

Met Glu Ile Phe Cys Asp Ser Glu Glu Asn Thr Glu Gly Thr Ser
260 265 270

Leu Thr Gln Gln Glu Ser Leu Ser Arg Thr Ile Pro Pro Asp Lys
275 280 285

Thr Val Ile Glu Tyr Glu Tyr Asp Val Arg Thr Thr Asp Ile Cys
290 295 300

Ala Gly Pro Glu Glu Gln Glu Leu Ser Leu Gln Glu Glu Val Ser
305 310 315

Thr Gln Gly Thr Leu Leu Glu Ser Gln Ala Ala Leu Ala Val Leu
320 325 330

Gly Pro Gln Thr Leu Gln Tyr Ser Tyr Thr Pro Gln Leu Gln Asp
335 340 345

Leu Asp Pro Leu Ala Gln Glu His Thr Asp Ser Glu Glu Gly Pro
350 355 360

Glu Glu Glu Pro Ser Thr Thr Leu Val Asp Trp Asp Pro Gln Thr
365 370 375

Gly Arg Leu Cys Ile Pro Ser Leu Ser Ser Phe Asp Gln Asp Ser
380 385 390

Glu Gly Cys Glu Pro Ser Glu Gly Asp Gly Leu Gly Glu Glu Gly
395 400 405

Leu Leu Ser Arg Leu Tyr Glu Glu Pro Ala Pro Asp Arg Pro Pro
410 415 420

Gly Glu Asn Glu Thr Tyr Leu Met Gln Phe Met Glu Glu Trp Gly
425 430 435

Leu Tyr Val Gln Met Glu Asn
440

<210> 105

<211> 21
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-21
 <223> Synthetic construct

 <400> 105
 cgctgctgct gttgctcctg g 21

 <210> 106
 <211> 18
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-18
 <223> Synthetic construct.

 <400> 106
 cagtgtgccca ggactttg 18

 <210> 107
 <211> 18
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-18
 <223> Synthetic construct.

 <400> 107
 agtcgcaggc agcgttgg 18

 <210> 108
 <211> 25
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-25
 <223> Synthetic construct.

 <400> 108
 ctcctccgag tctgtgtgct cctgc 25

 <210> 109
 <211> 51
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence

<222> 1-51

<223> Synthetic construct.

<400> 109

ggacgggcag ttccctgtgt ctctggtggt ttgcctaaac ctgcaaacaat 50

c 51

<210> 110

<211> 1114

<212> DNA

<213> Homo sapiens

<400> 110

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cgccagcctg cgtctgccat ggggctcggg ttgaggggct ggggacgtcc 100

tctgctgact gtggccaccg ccctgatgct gcccgtaag cccccgcag 150

gctcctgggg ggcccagatc atcgggggcc acgaggtgac cccccactcc 200

aggccctaca tggcatccgt gcgcttcggg ggccaacatc actgcggagg 250

cttctgctg cgagcccgtt ggggtggtctc ggccgcccac tgcttcagcc 300

acagagacct ccgcaactggc ctggtggtgc tgggcgcca cgtcctgagt 350

actgcggagc ccaccagca ggtgtttggc atcgatgctc tcaccagca 400

ccccgactac caccatga cccacgcaa cgacatctgc ctgctgcggc 450

tgaacggctc tgctgtcctg ggccctgcag tggggctgct gaggtgcca 500

gggagaaggg ccaggcccc caccgaggg acacggtgcc ggggtggctgg 550

ctggggcttc gtgtctgact ttgaggagct gccgcctgga ctgatggagg 600

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ccccaggaga agccgcctga gccacaacct tgcggcatgc aaatgagatg 950

gccgctccag gcctggaatg ttccgtgggt gggccccacg ggaagcctga 1000

tggtcagggg tgggggtggga cgggcagcgg tggggcacac ccattccaca 1050

tgcaaagggc agaagcaaac ccagtaaaat gttaactgac aaaaaaaaaa 1100

aaaaaaaaaa gaaa 1114

<210> 111

<211> 283

<212> PRT

<213> Homo sapiens

<400> 111

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Leu | Gly | Leu | Arg | Gly | Trp | Gly | Arg | Pro | Leu | Leu | Thr | Val | 1 | 5 | 10 | 15 |
| Ala | Thr | Ala | Leu | Met | Leu | Pro | Val | Lys | Pro | Pro | Ala | Gly | Ser | Trp | 20 | 25 | 30 | |
| Gly | Ala | Gln | Ile | Ile | Gly | Gly | His | Glu | Val | Thr | Pro | His | Ser | Arg | 35 | 40 | 45 | |
| Pro | Tyr | Met | Ala | Ser | Val | Arg | Phe | Gly | Gly | Gln | His | His | Cys | Gly | 50 | 55 | 60 | |
| Gly | Phe | Leu | Leu | Arg | Ala | Arg | Trp | Val | Val | Ser | Ala | Ala | His | Cys | 65 | 70 | 75 | |
| Phe | Ser | His | Arg | Asp | Leu | Arg | Thr | Gly | Leu | Val | Val | Leu | Gly | Ala | 80 | 85 | 90 | |
| His | Val | Leu | Ser | Thr | Ala | Glu | Pro | Thr | Gln | Gln | Val | Phe | Gly | Ile | 95 | 100 | 105 | |
| Asp | Ala | Leu | Thr | Thr | His | Pro | Asp | Tyr | His | Pro | Met | Thr | His | Ala | 110 | 115 | 120 | |
| Asn | Asp | Ile | Cys | Leu | Leu | Arg | Leu | Asn | Gly | Ser | Ala | Val | Leu | Gly | 125 | 130 | 135 | |
| Pro | Ala | Val | Gly | Leu | Leu | Arg | Leu | Pro | Gly | Arg | Arg | Ala | Arg | Pro | 140 | 145 | 150 | |
| Pro | Thr | Ala | Gly | Thr | Arg | Cys | Arg | Val | Ala | Gly | Trp | Gly | Phe | Val | 155 | 160 | 165 | |
| Ser | Asp | Phe | Glu | Glu | Leu | Pro | Pro | Gly | Leu | Met | Glu | Ala | Lys | Val | 170 | 175 | 180 | |
| Arg | Val | Leu | Asp | Pro | Asp | Val | Cys | Asn | Ser | Ser | Trp | Lys | Gly | His | 185 | 190 | 195 | |
| Leu | Thr | Leu | Thr | Met | Leu | Cys | Thr | Arg | Ser | Gly | Asp | Ser | His | Arg | 200 | 205 | 210 | |
| Arg | Gly | Phe | Cys | Ser | Ala | Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Arg | 215 | 220 | 225 | |
| Asn | Arg | Ala | His | Gly | Leu | Val | Ser | Phe | Ser | Gly | Leu | Trp | Cys | Gly | 230 | 235 | 240 | |
| Asp | Pro | Lys | Thr | Pro | Asp | Val | Tyr | Thr | Gln | Val | Ser | Ala | Phe | Val | 245 | 250 | 255 | |

Ala Trp Ile Trp Asp Val Val Arg Arg Ser Ser Pro Gln Pro Gly
260 265 270

Pro Leu Pro Gly Thr Thr Arg Pro Pro Gly Glu Ala Ala
275 280

<210> 112
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 112
gacgtctgca acagctcctg gaag 24

<210> 113
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 113
cgagaaggaa acgaggccgt gag 23

<210> 114
<211> 44
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-44
<223> Synthetic construct.

<400> 114
tgacacttac catgctctgc acccgagtg gggacagcca caga 44

<210> 115
<211> 1808
<212> DNA
<213> Homo sapiens

<400> 115
gagctacca ggcggctggt gtgcagcaag ctccgcgccg actccggacg 50
cctgacgcct gacgcctgtc cccggcccg catgagccgc tacctgctgc 100
cgctgtcggc gctgggcacg gtagcaggcg ccgccgtgct gctcaaggac 150
tatgtcaccg gtggggcttg cccagcaag gccaccatcc ctgggaagac 200

ggtcatcgtg acgggcgcca acacaggcat cgggaagcag accgccttgg 250
 aactggccag gagaggaggc aacatcatcc tggcctgccg agacatggag 300
 aagtgtgagg cggcagcaaa ggacatccgc ggggagaccc tcaatcacca 350
 tgtcaacgcc cggcacctgg acttggcttc cctcaagtct atccgagagt 400
 ttgcagcaaa gatcattgaa gaggaggagc gagtggacat tctaataaac 450
 aacgcgggtg tgatgcggtg cccccactgg accaccgagg acggcttcga 500
 gatgcagttt ggcgttaacc acctgggtca ctttctcttg acaaacttgc 550
 tgctggacaa gctgaaagcc tcagcccctt cgcggatcat caacctctcg 600
 tccctggccc atgttgctgg gcacatagac tttgacgact tgaactggca 650
 gacgaggaag tataacacca aagccgccta ctgccagagc aagctcgcca 700
 tcgtcctctt caccaaggag ctgagccggc ggctgcaagg ctctggtgtg 750
 actgtcaacg ccctgcaccc cggcgtggcc aggacagagc tgggcagaca 800
 cacgggcata catggctcca ctttctccag caccacactc gggcccatct 850
 tctggctgct ggtcaagagc cccgagctgg ccgcccagcc cagcacatac 900
 ctggccgtgg cggaggaact ggcggatgtt tccggaagt acttcgatgg 950
 actcaaacag aaggccccgg ccccgaggc tgaggatgag gaggtggccc 1000
 ggaggctttg ggctgaaagt gcccgcctgg tgggcttaga ggctccctct 1050
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 aggatggcgc ctccagaccg aggacagctg tccgccatgc ccgcagcttc 1150
 ctggcactac ctgagccggg agaccagga ctggcggccg ccatgcccgc 1200
 agtaggttct agggggcggt gctggccgca gtggactggc ctgcaggtga 1250
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 agaggggcca tctgatgctt cccctgggaa tctaaactgg gaatggccga 1350
 ggaggaaggg gctctgtgca cttgcaggcc acgtcaggag agccagcggg 1400
 gcctgtcggg gagggttcca agtggtccg tgaagagcat gggcaagttg 1450
 tctgacactt ggtggattct tgggtccctg tgggaccttg tgcatgcatg 1500
 gtcctctctg agccttgggt tcttcagcag tgagatgctc agaataactg 1550
 ctgtctccca tgatggtgtg gtacagcgag ctgttgctct gctatggcat 1600
 ggctgtgccg ggggtgtttg ctgagggtt cctgtgccag agcccagcca 1650

gagagcaggt gcaggtgtca tcccgagttc aggctctgca cggcatggag 1700
 tgggaacccc accagctgct gctacaggac ctgggattgc ctgggactcc 1750
 caccttcccta tcaattctca tggtagtcca aactgcagac tctcaaactt 1800
 gctcattt 1808

<210> 116
 <211> 331
 <212> PRT
 <213> Homo sapiens

<400> 116
 Met Ser Arg Tyr Leu Leu Pro Leu Ser Ala Leu Gly Thr Val Ala
 1 5 10 15
 Gly Ala Ala Val Leu Leu Lys Asp Tyr Val Thr Gly Gly Ala Cys
 20 25 30
 Pro Ser Lys Ala Thr Ile Pro Gly Lys Thr Val Ile Val Thr Gly
 35 40 45
 Ala Asn Thr Gly Ile Gly Lys Gln Thr Ala Leu Glu Leu Ala Arg
 50 55 60
 Arg Gly Gly Asn Ile Ile Leu Ala Cys Arg Asp Met Glu Lys Cys
 65 70 75
 Glu Ala Ala Ala Lys Asp Ile Arg Gly Glu Thr Leu Asn His His
 80 85 90
 Val Asn Ala Arg His Leu Asp Leu Ala Ser Leu Lys Ser Ile Arg
 95 100 105
 Glu Phe Ala Ala Lys Ile Ile Glu Glu Glu Glu Arg Val Asp Ile
 110 115 120
 Leu Ile Asn Asn Ala Gly Val Met Arg Cys Pro His Trp Thr Thr
 125 130 135
 Glu Asp Gly Phe Glu Met Gln Phe Gly Val Asn His Leu Gly His
 140 145 150
 Phe Leu Leu Thr Asn Leu Leu Leu Asp Lys Leu Lys Ala Ser Ala
 155 160 165
 Pro Ser Arg Ile Ile Asn Leu Ser Ser Leu Ala His Val Ala Gly
 170 175 180
 His Ile Asp Phe Asp Asp Leu Asn Trp Gln Thr Arg Lys Tyr Asn
 185 190 195
 Thr Lys Ala Ala Tyr Cys Gln Ser Lys Leu Ala Ile Val Leu Phe
 200 205 210
 Thr Lys Glu Leu Ser Arg Arg Leu Gln Gly Ser Gly Val Thr Val
 215 220 225

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ala | Leu | His | Pro | Gly | Val | Ala | Arg | Thr | Glu | Leu | Gly | Arg | His |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Thr | Gly | Ile | His | Gly | Ser | Thr | Phe | Ser | Ser | Thr | Thr | Leu | Gly | Pro |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ile | Phe | Trp | Leu | Leu | Val | Lys | Ser | Pro | Glu | Leu | Ala | Ala | Gln | Pro |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Ser | Thr | Tyr | Leu | Ala | Val | Ala | Glu | Glu | Leu | Ala | Asp | Val | Ser | Gly |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Lys | Tyr | Phe | Asp | Gly | Leu | Lys | Gln | Lys | Ala | Pro | Ala | Pro | Glu | Ala |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Glu | Asp | Glu | Glu | Val | Ala | Arg | Arg | Leu | Trp | Ala | Glu | Ser | Ala | Arg |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Leu | Val | Gly | Leu | Glu | Ala | Pro | Ser | Val | Arg | Glu | Gln | Pro | Leu | Pro |
| | | | | 320 | | | | | 325 | | | | | 330 |

Arg

<210> 117
 <211> 2249
 <212> DNA
 <213> Homo sapiens

<400> 117
 gaagttcgcg agcgcgtggca tgtggtcctg gggcgcggtt ggcggcgctg 50
 ctggcggtgc tggcgctcgg gacaggagac ccagaaaggg ctgcggctcg 100
 gggcgacacg ttctcggcgc tgaccagcgt ggcgcgcgcc ctggcgcccg 150
 agcgccggct gctggggctg ctgaggcggg acctgcgcgg ggaggaggcg 200
 cggctgcggg acctgactag attctacgac aaggtacttt ctttgcata 250
 ggattcaaca acccctgtgg ctaaccctct gcttgcatct actctcatca 300
 aacgcctgca gtctgactgg aggaatgtgg tacatagtct ggaggccagt 350
 gagaacatcc gagctctgaa ggatggctat gagaaggtgg agcaagacct 400
 tccagccttt gaggaccttg agggagcagc aagggccctg atgcggctgc 450
 aggacgtgta catgctcaat gtgaaaggcc tggcccgagg tgtctttcag 500
 agagtcaact gctctgccat cactgacctg tacagcccca aacggctctt 550
 ttctctcaca ggggatgact gcttccaagt tggcaagggt gcctatgaca 600
 tgggggatta ttaccatgcc attccatggc tggaggaggc tgtcagtcct 650
 ttccgaggat cttacggaga gtggaagaca gaggatgagg caagtctaga 700

agatgccttg gatcacttgg cctttgctta tttccgggca ggaaatgttt 750
 cgtgtgccct cagcctctct cgggagtttc ttctctacag cccagataat 800
 aagaggatgg ccaggaatgt cttgaaatat gaaaggctct tggcagagag 850
 ccccaaccac gtggtagctg aggctgtcat ccagaggccc aatatacccc 900
 acctgcagac cagagacacc tacgaggggc tatgtcagac cctgggttcc 950
 cagcccactc tctaccagat ccctagcctc tactgttcct atgagaccaa 1000
 ttccaacgcc tacctgctgc tccagcccat ccggaaggag gtcattccacc 1050
 tggagcccta cattgctctc taccatgact tcgtcagtga ctcagagggt 1100
 cagaaaatta gagaacttgc agaaccatgg ctacagaggc cagtgggtggc 1150
 atcaggggag aagcagttac aagtggagta ccgcatcagc aaaagtgcct 1200
 ggctgaagga cactgttgac caaaaactgg tgaccctcaa ccaccgcatt 1250
 gctgccctca caggccttga tgtccggcct ccctatgcag agtatctgca 1300
 ggtggtgaac tatggcatcg gaggacacta tgagcctcac tttgaccatg 1350
 ctacgtcacc aagcagcccc ctctacagaa tgaagtcagg aaaccgagtt 1400
 gcaacattta tgatctatct gagctcgggtg gaagctggag gagccacagc 1450
 cttcatctat gccaacctca gcgtgcctgt ggtaggaat gcagcactgt 1500
 tttggtggaa cctgcacagg agtgggtgaag gggacagtga cacacttcat 1550
 gctggctgtc ctgtcctggg gggagataag tgggtggcca acaagtggat 1600
 acatgagtat ggacaggaat tccgcagacc ctgcagctcc agccctgaag 1650
 actgaactgt tggcagagag aagctggtgg agtcctgtgg ctttccagag 1700
 aagccaggag ccaaaagctg gggtaggaga ggagaaagca gagcagcctc 1750
 ctggaagaag gccttgtcag ctttgtctgt gcctcgcaaa tcagaggcaa 1800
 gggagagggtt gttaccaggg gacactgaga atgtacattt gatctgcccc 1850
 agccacggaa gtcagagtag gatgcacagt acaaaggagg ggggagtgga 1900
 ggcctgagag ggaagtttct ggagttcaga tactctctgt tgggaacagg 1950
 acatctcaac agtctcaggt tcgatcagtg ggtcttttgg cactttgaac 2000
 cttgaccaca gggaccaaga agtggcaatg aggacacctg caggaggggc 2050
 tagcctgact cccagaactt taagactttc tccccactgc cttctgctgc 2100
 agcccaagca gggagtgtcc ccctcccaga agcatatccc agatgagtgg 2150

tacattatat aaggattttt tttaagttga aaacaacttt cttttctttt 2200

tgtatgatgg ttttttaaca cagtcattaa aaatgtttat aaatcaaaa 2249

<210> 118

<211> 544

<212> PRT

<213> Homo sapiens

<400> 118

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Pro | Gly | Ala | Arg | Leu | Ala | Ala | Leu | Leu | Ala | Val | Leu | Ala | 1 | 5 | 10 | 15 |
| Leu | Gly | Thr | Gly | Asp | Pro | Glu | Arg | Ala | Ala | Ala | Arg | Gly | Asp | Thr | 20 | 25 | 30 | |
| Phe | Ser | Ala | Leu | Thr | Ser | Val | Ala | Arg | Ala | Leu | Ala | Pro | Glu | Arg | 35 | 40 | 45 | |
| Arg | Leu | Leu | Gly | Leu | Leu | Arg | Arg | Tyr | Leu | Arg | Gly | Glu | Glu | Ala | 50 | 55 | 60 | |
| Arg | Leu | Arg | Asp | Leu | Thr | Arg | Phe | Tyr | Asp | Lys | Val | Leu | Ser | Leu | 65 | 70 | 75 | |
| His | Glu | Asp | Ser | Thr | Thr | Pro | Val | Ala | Asn | Pro | Leu | Leu | Ala | Phe | 80 | 85 | 90 | |
| Thr | Leu | Ile | Lys | Arg | Leu | Gln | Ser | Asp | Trp | Arg | Asn | Val | Val | His | 95 | 100 | 105 | |
| Ser | Leu | Glu | Ala | Ser | Glu | Asn | Ile | Arg | Ala | Leu | Lys | Asp | Gly | Tyr | 110 | 115 | 120 | |
| Glu | Lys | Val | Glu | Gln | Asp | Leu | Pro | Ala | Phe | Glu | Asp | Leu | Glu | Gly | 125 | 130 | 135 | |
| Ala | Ala | Arg | Ala | Leu | Met | Arg | Leu | Gln | Asp | Val | Tyr | Met | Leu | Asn | 140 | 145 | 150 | |
| Val | Lys | Gly | Leu | Ala | Arg | Gly | Val | Phe | Gln | Arg | Val | Thr | Gly | Ser | 155 | 160 | 165 | |
| Ala | Ile | Thr | Asp | Leu | Tyr | Ser | Pro | Lys | Arg | Leu | Phe | Ser | Leu | Thr | 170 | 175 | 180 | |
| Gly | Asp | Asp | Cys | Phe | Gln | Val | Gly | Lys | Val | Ala | Tyr | Asp | Met | Gly | 185 | 190 | 195 | |
| Asp | Tyr | Tyr | His | Ala | Ile | Pro | Trp | Leu | Glu | Glu | Ala | Val | Ser | Leu | 200 | 205 | 210 | |
| Phe | Arg | Gly | Ser | Tyr | Gly | Glu | Trp | Lys | Thr | Glu | Asp | Glu | Ala | Ser | 215 | 220 | 225 | |
| Leu | Glu | Asp | Ala | Leu | Asp | His | Leu | Ala | Phe | Ala | Tyr | Phe | Arg | Ala | 230 | 235 | 240 | |

Gly Asn Val Ser Cys Ala Leu Ser Leu Ser Arg Glu Phe Leu Leu
245 250 255

Tyr Ser Pro Asp Asn Lys Arg Met Ala Arg Asn Val Leu Lys Tyr
260 265 270

Glu Arg Leu Leu Ala Glu Ser Pro Asn His Val Val Ala Glu Ala
275 280 285

Val Ile Gln Arg Pro Asn Ile Pro His Leu Gln Thr Arg Asp Thr
290 295 300

Tyr Glu Gly Leu Cys Gln Thr Leu Gly Ser Gln Pro Thr Leu Tyr
305 310 315

Gln Ile Pro Ser Leu Tyr Cys Ser Tyr Glu Thr Asn Ser Asn Ala
320 325 330

Tyr Leu Leu Leu Gln Pro Ile Arg Lys Glu Val Ile His Leu Glu
335 340 345

Pro Tyr Ile Ala Leu Tyr His Asp Phe Val Ser Asp Ser Glu Ala
350 355 360

Gln Lys Ile Arg Glu Leu Ala Glu Pro Trp Leu Gln Arg Ser Val
365 370 375

Val Ala Ser Gly Glu Lys Gln Leu Gln Val Glu Tyr Arg Ile Ser
380 385 390

Lys Ser Ala Trp Leu Lys Asp Thr Val Asp Pro Lys Leu Val Thr
395 400 405

Leu Asn His Arg Ile Ala Ala Leu Thr Gly Leu Asp Val Arg Pro
410 415 420

Pro Tyr Ala Glu Tyr Leu Gln Val Val Asn Tyr Gly Ile Gly Gly
425 430 435

His Tyr Glu Pro His Phe Asp His Ala Thr Ser Pro Ser Ser Pro
440 445 450

Leu Tyr Arg Met Lys Ser Gly Asn Arg Val Ala Thr Phe Met Ile
455 460 465

Tyr Leu Ser Ser Val Glu Ala Gly Gly Ala Thr Ala Phe Ile Tyr
470 475 480

Ala Asn Leu Ser Val Pro Val Val Arg Asn Ala Ala Leu Phe Trp
485 490 495

Trp Asn Leu His Arg Ser Gly Glu Gly Asp Ser Asp Thr Leu His
500 505 510

Ala Gly Cys Pro Val Leu Val Gly Asp Lys Trp Val Ala Asn Lys
515 520 525

Trp Ile His Glu Tyr Gly Gln Glu Phe Arg Arg Pro Cys Ser Ser

530

535

540

Ser Pro Glu Asp

<210> 119
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 119
cgggacagga gacccagaaa ggg 23

<210> 120
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 120
ggccaagtga tccaaggcat cttc 24

<210> 121
<211> 49
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-49
<223> Synthetic construct.

<400> 121
ctgcgggacc tgactagatt ctacgacaag gtactttctt tgcattggg 49

<210> 122
<211> 1778
<212> DNA
<213> Homo sapiens

<400> 122
gagatagggga gtctgggttt aagttcctgc tccatctcag gagccccctgc 50
tcccaccct aggaagccac cagactccac ggtgtggggc caatcagggtg 100
gaatcggccc tggcaggtgg ggccacgagc gctggctgag ggaccgagcc 150
ggagagcccc ggagcccccg taaccgcgc ggggagcgcc caggatgccg 200

cgcggggact cggagcaggt ggcgtactgc gcgcgcttct cctacctctg 250
gctcaagttt tcaattatca tctattccac cgtgttcttg ctgattgggg 300
ccctggtcct gtctgtgggc atctatgcag aggttgagcg gcagaaatat 350
aaaacccttg aaagtgcctt cctggctcca gccatcatcc tcatcctcct 400
gggcgtcgtc atgttcatgg tctccttcat tgggtgtgctg gcgtccctcc 450
gtgacaacct gtaccttctc caagcattca tgtacatcct tgggatctgc 500
ctcatcatgg agctcattgg tggcgtgggt gccttgacct tccggaacca 550
gaccattgac ttctgaacg acaacattcg aagaggaatt gagaactact 600
atgatgatct ggacttcaaa aacatcatgg actttgttca gaaaaagttc 650
aagtgtctg gcggggagga ctaccgagat tggagcaaga atcagtacca 700
cgactgcagt gcccctggac ccctggcctg tggggtgccc tacacctgct 750
gcatcaggaa cagcagaaa gttgtcaaca ccatgtgtgg ctacaaaact 800
atcgacaagg agcgtttcag tgtgcaggat gtcacttacg tgcggggctg 850
caccaacgcc gtgatcatct ggttcatgga caactacacc atcatggcgt 900
gcatcctcct gggcatcctg cttccccagt tcctgggggt gctgctgacg 950
ctgctgtaca tcacccgggt ggaggacatc atcatggagc actctgtcac 1000
tgatgggctc ctggggcccg gtgccaagcc cagcgtggag gcggcaggca 1050
cgggatgctg cttgtgttac cccaattagg gccagcctg ccatggcagc 1100
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ggacagggct gcggcccctc tgcccacact cagtactgac caaagccagg 1200
gctgtgtgtg cctgtgtgta ggtcccacgg cctctgctc cccagggagc 1250
agagcctggg cctcccctaa gaggctttcc ccgaggcagc tctggaatct 1300
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gggcaggagg gaagagctgt ccatgcagcc acgcccagtg ccaggttggc 1550
ctcttctcag cctcccaggt gccttgagcc ctcttgcaag ggcggtctgct 1600
tccttgagcc tagttttttt ttacgtgatt tttgtaacat tcattttttt 1650

[illegible]

```
<210> 123
<211> 294
<212> PRT
<213> Homo sapiens
```

```

<400> 123
Met Pro Arg Gly Asp Ser Glu Gln Val Arg Tyr Cys Ala Arg Phe
  1          5          10          15
Ser Tyr Leu Trp Leu Lys Phe Ser Leu Ile Ile Tyr Ser Thr Val
          20          25          30
Phe Trp Leu Ile Gly Ala Leu Val Leu Ser Val Gly Ile Tyr Ala
          35          40          45
Glu Val Glu Arg Gln Lys Tyr Lys Thr Leu Glu Ser Ala Phe Leu
          50          55          60
Ala Pro Ala Ile Ile Leu Ile Leu Leu Gly Val Val Met Phe Met
          65          70          75
Val Ser Phe Ile Gly Val Leu Ala Ser Leu Arg Asp Asn Leu Tyr
          80          85          90
Leu Leu Gln Ala Phe Met Tyr Ile Leu Gly Ile Cys Leu Ile Met
          95          100          105
Glu Leu Ile Gly Gly Val Val Ala Leu Thr Phe Arg Asn Gln Thr
          110          115          120
Ile Asp Phe Leu Asn Asp Asn Ile Arg Arg Gly Ile Glu Asn Tyr
          125          130          135
Tyr Asp Asp Leu Asp Phe Lys Asn Ile Met Asp Phe Val Gln Lys
          140          145          150
Lys Phe Lys Cys Cys Gly Gly Glu Asp Tyr Arg Asp Trp Ser Lys
          155          160          165
Asn Gln Tyr His Asp Cys Ser Ala Pro Gly Pro Leu Ala Cys Gly
          170          175          180
Val Pro Tyr Thr Cys Cys Ile Arg Asn Thr Thr Glu Val Val Asn
          185          190          195
Thr Met Cys Gly Tyr Lys Thr Ile Asp Lys Glu Arg Phe Ser Val
          200          205          210
Gln Asp Val Ile Tyr Val Arg Gly Cys Thr Asn Ala Val Ile Ile
          215          220          225
Trp Phe Met Asp Asn Tyr Thr Ile Met Ala Cys Ile Leu Leu Gly

```

[illegible]

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ile | Leu | Leu | Pro | Gln 245 | Phe | Leu | Gly | Val | Leu 250 | Leu | Thr | Leu | Leu | Tyr 255 |
| Ile | Thr | Arg | Val | Glu 260 | Asp | Ile | Ile | Met | Glu 265 | His | Ser | Val | Thr | Asp 270 |
| Gly | Leu | Leu | Gly | Pro 275 | Gly | Ala | Lys | Pro | Ser 280 | Val | Glu | Ala | Ala | Gly 285 |
| Thr | Gly | Cys | Cys | Leu 290 | Cys | Tyr | Pro | Asn | | | | | | |

```
<210> 124
<211> 25
<212> DNA
<213> Artificial
```

```
<220>  
<221> Artificial Sequence  
<222> 1-25  
<223> Synthetic construct.
```

```
<400> 124
    atcatctatt ccaccgtggt ctggc 25
```

```
<210> 125
<211> 25
<212> DNA
<213> Artificial
```

```
<220>  
<221> Artificial Sequence  
<222> 1-25  
<223> Synthetic construct.
```

```
<400> 125
gacagagtgc tccatgatga tqtcc 25
```

```
<210> 126
<211> 50
<212> DNA
<213> Artificial
```

```
<220>  
<221> Artificial Sequence  
<222> 1-50  
<223> Synthetic construct.
```

<400> 126
cctgtctgtg ggcattctatg cagaggttga gcggcagaaa tataaaaccc 50

```
<210> 127
<211> 1636
<212> DNA
<213> Homo sapiens
```

<400> 127

gaggagcggg ccgaggactc cagcgtgccc aggtctggca tcttgcactt 50
gctgccctct gacacctggg aagatggccg gcccgaggac cttcaccctt 100
ctctgtggtt tgctggcagc caccttgatc caagccaccc tcagtccac 150
tgcagttctc atcctcggcc caaaagtcac caaagaaaag ctgacacagg 200
agctgaagga ccacaacgcc accagcatcc tgcagcagct gccgctgctc 250
agtgccatgc gggaaaagcc agccggaggc atcctgtgac tgggcagcct 300
ggtgaacacc gtccctgaagc acatcatctg gctgaaggct atcacagcta 350
acatccctcca gctgcagggtg aagccctcgg ccaatgacca ggagctgcta 400
gtcaagatcc ccttgacatc ggtggctgga ttcaacacgc ccttggtcaa 450
gaccatcgtg gagttccaca tgacgactga ggccaagcc accatccgca 500
tggacaccag tgcaagtggc cccaccgcgc tggctcctcag tgactgtgcc 550
accagccatg ggagcctgcg catccaactg ctgtataagc tctccttctt 600
ggtgaacgcc ttagctaagc aggtcatgaa cctcctagtg ccatccctgc 650
ccaatctagt gaaaaaccag ctgtgtcccg tgatcgaggc ttccttcaat 700
ggcatgtatg cagacctcct gcagctggtg aagggtgcca tttccctcag 750
cattgaccgt ctggagtttg accttctgta tcttgccatc aagggtgaca 800
ccattcagct ctacctgggg gccaaagttgt tggactcaca gggaaagggtg 850
accaagtggg tcaataactc tgcagcttcc ctgacaatgc ccaccctgga 900
caacatcccg ttcagcctca tctgtagtca ggacgtggtg aaagctgcag 950
tggctgctgt gctctctcca gaagaattca tggctcctgtt ggactctgtg 1000
cttcttgaga gtgcccatcg gctgaagtca agcatcgggc tgatcaatga 1050
aaagggtgca gataagctgg gatctacca gatcgtgaag atcctaactc 1100
aggacactcc cgagtttttt atagaccaag gccatgcca ggtggcccaa 1150
ctgatcgtgc tggaaagtgt tccctccagt gaagccctcc gccctttgtt 1200
caccctgggc atcgaagcca gctcgggaagc tcagttttac accaaagggtg 1250
accaacttat actcaacttg aataacatca gctctgatcg gatccagctg 1300
atgaactctg ggattggctg gttccaacct gatgttctga aaaacatcat 1350
cactgagatc atccactcca tctgtctgcc gaaccagaat ggcaaattaa 1400
gatctggggg cccagtgta ttggtgaagg ccttgggatt cgaggcagct 1450

<210> 128
<211> 484
<212> PRT
<213> Homo sapiens

<400> 128
Met Ala Gly Pro Trp Thr Phe Thr Leu Leu Cys Gly Leu Leu Ala
1 5 10 15
Ala Thr Leu Ile Gln Ala Thr Leu Ser Pro Thr Ala Val Leu Ile
20 25 30
Leu Gly Pro Lys Val Ile Lys Glu Lys Leu Thr Gln Glu Leu Lys
35 40 45
Asp His Asn Ala Thr Ser Ile Leu Gln Gln Leu Pro Leu Leu Ser
50 55 60
Ala Met Arg Glu Lys Pro Ala Gly Gly Ile Pro Val Leu Gly Ser
65 70 75
Leu Val Asn Thr Val Leu Lys His Ile Ile Trp Leu Lys Val Ile
80 85 90
Thr Ala Asn Ile Leu Gln Leu Gln Val Lys Pro Ser Ala Asn Asp
95 100 105
Gln Glu Leu Leu Val Lys Ile Pro Leu Asp Met Val Ala Gly Phe
110 115 120
Asn Thr Pro Leu Val Lys Thr Ile Val Glu Phe His Met Thr Thr
125 130 135
Glu Ala Gln Ala Thr Ile Arg Met Asp Thr Ser Ala Ser Gly Pro
140 145 150
Thr Arg Leu Val Leu Ser Asp Cys Ala Thr Ser His Gly Ser Leu
155 160 165
Arg Ile Gln Leu Leu Tyr Lys Leu Ser Phe Leu Val Asn Ala Leu
170 175 180
Ala Lys Gln Val Met Asn Leu Leu Val Pro Ser Leu Pro Asn Leu
185 190 195
Val Lys Asn Gln Leu Cys Pro Val Ile Glu Ala Ser Phe Asn Gly
200 205 210
Met Tyr Ala Asp Leu Leu Gln Leu Val Lys Val Pro Ile Ser Leu
215 220 225

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ile | Asp | Arg | Leu | Glu | Phe | Asp | Leu | Leu | Tyr | Pro | Ala | Ile | Lys | 230 | 235 | 240 |
| Gly | Asp | Thr | Ile | Gln | Leu | Tyr | Leu | Gly | Ala | Lys | Leu | Leu | Asp | Ser | 245 | 250 | 255 |
| Gln | Gly | Lys | Val | Thr | Lys | Trp | Phe | Asn | Asn | Ser | Ala | Ala | Ser | Leu | 260 | 265 | 270 |
| Thr | Met | Pro | Thr | Leu | Asp | Asn | Ile | Pro | Phe | Ser | Leu | Ile | Val | Ser | 275 | 280 | 285 |
| Gln | Asp | Val | Val | Lys | Ala | Ala | Val | Ala | Ala | Val | Leu | Ser | Pro | Glu | 290 | 295 | 300 |
| Glu | Phe | Met | Val | Leu | Leu | Asp | Ser | Val | Leu | Pro | Glu | Ser | Ala | His | 305 | 310 | 315 |
| Arg | Leu | Lys | Ser | Ser | Ile | Gly | Leu | Ile | Asn | Glu | Lys | Ala | Ala | Asp | 320 | 325 | 330 |
| Lys | Leu | Gly | Ser | Thr | Gln | Ile | Val | Lys | Ile | Leu | Thr | Gln | Asp | Thr | 335 | 340 | 345 |
| Pro | Glu | Phe | Phe | Ile | Asp | Gln | Gly | His | Ala | Lys | Val | Ala | Gln | Leu | 350 | 355 | 360 |
| Ile | Val | Leu | Glu | Val | Phe | Pro | Ser | Ser | Glu | Ala | Leu | Arg | Pro | Leu | 365 | 370 | 375 |
| Phe | Thr | Leu | Gly | Ile | Glu | Ala | Ser | Ser | Glu | Ala | Gln | Phe | Tyr | Thr | 380 | 385 | 390 |
| Lys | Gly | Asp | Gln | Leu | Ile | Leu | Asn | Leu | Asn | Asn | Ile | Ser | Ser | Asp | 395 | 400 | 405 |
| Arg | Ile | Gln | Leu | Met | Asn | Ser | Gly | Ile | Gly | Trp | Phe | Gln | Pro | Asp | 410 | 415 | 420 |
| Val | Leu | Lys | Asn | Ile | Ile | Thr | Glu | Ile | Ile | His | Ser | Ile | Leu | Leu | 425 | 430 | 435 |
| Pro | Asn | Gln | Asn | Gly | Lys | Leu | Arg | Ser | Gly | Val | Pro | Val | Ser | Leu | 440 | 445 | 450 |
| Val | Lys | Ala | Leu | Gly | Phe | Glu | Ala | Ala | Glu | Ser | Ser | Leu | Thr | Lys | 455 | 460 | 465 |
| Asp | Ala | Leu | Val | Leu | Thr | Pro | Ala | Ser | Leu | Trp | Lys | Pro | Ser | Ser | 470 | 475 | 480 |

Pro Val Ser Gln

<210> 129
 <211> 2213
 <212> DNA
 <213> Homo sapiens

<400> 129
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aaagaaggag atggtgttat ctgaaaagggt tagtcagctg atggaatgga 150
ctaacaaaag acctgtaata agaataaatg gagacaagtt ccgtcgcctt 200
gtgaaagccc caccgagaaa ttactccgtt atcgtcatgt tcaactgtctt 250
ccaactgcat agacagtgtg tcgtttgcaa gcaagctgat gaagaattcc 300
agatcctggc aaactcctgg cgataactcca gtgcattcac caacaggata 350
ttttttgcca tgggtggattt tgatgaaggc tctgatgtat ttcagatgct 400
aaacatgaat tcagctccaa ctttcatcaa ctttcctgca aaagggaaac 450
ccaaacgggg tgatacatat gagttacagg tgcgggggttt ttcagctgag 500
cagattgccc ggtggatcgc cgacagaact gatgtcaata ttagagtgat 550
tagaccccca aattatgctg gtccccttat gttgggattg cttttggctg 600
ttattggtgg acttgtgtat cttcgaagaa gtaatatgga atttctctt 650
aataaaaactg gatgggcttt tgcagctttg tgttttgtgc ttgctatgac 700
atctggtcaa atgtggaacc atataagagg accaccatat gcccataaga 750
atcccccacac gggacatgtg aattatatcc atggaagcag tcaagcccag 800
tttgtagctg aaacacacat tgttcttctg tttaatggtg gagttacctt 850
aggaatggtg cttttatgtg aagctgctac ctctgacatg gatattggaa 900
agcgaaagat aatgtgtgtg gctgggtattg gacttgttgt attattcttc 950
agttggatgc tctctatatt tagatctaaa tatcatggct acccatacag 1000
ctttctgatg agttaaaaag gtcccagaga tatatagaca ctggagtact 1050
ggaaattgaa aaacgaaaat cgtgtgtgtt tgaaaagaag aatgcaactt 1100
gtatattttg tattacctct ttttttcaag tgatttaa atgttaatcat 1150
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ctgaggtatt tgaaaataat taccctctta accttctctt ccagtgaaac 1250
tttatggaac atttaattta gtacaattaa gtatattata aaaattgtaa 1300
aactactact ttgttttagt tagaacaag ctcaaaacta ctttagtta 1350
cttggtcatc tgattttata ttgccttatc caaagatggg gaaagtaagt 1400
cctgaccagg tgttccaca tatgcctgtt acagataact acattaggaa 1450

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 tttccttttg agtagagaaa ttatgtgtgt catgtggtct tctgaaaatg 1550
 gaacaccatt cttcagagca cacgtctagc cctcagcaag acagttgttt 1600
 ctctctctcc ttgcatattt cctactgcgc tccagcctga gtgatagagt 1650
 gagactctgt ctcaaaaaaa agtatctcta aatacaggat tataatttct 1700
 gcttgagtat ggtgttaact accttgtatt tagaaagatt tcagattcat 1750
 tccatctcct tagttttctt ttaaggtgac ccatctgtga taaaaatata 1800
 gcttagtgct aaaatcagtg taacttatac atggcctaaa atgtttctac 1850
 aaattagagt ttgtcactta ttccatttgt acctaagaga aaaataggct 1900
 cagttagaaa aggactccct ggccaggcgc agtgacttac gcctgtaatc 1950
 tcagcacttt gggaggccaa ggcaggcaga tcacgaggtc aggagttcga 2000
 gaccatcttg gccaacatgg tgaaaccccg tctctactaa aaatataaaa 2050
 attagctggg tgtggtggca ggagcctgta atcccagcta cacaggaggc 2100
 tgaggcacga gaatcacttg aactcaggag atggaggttt cagtgagccg 2150
 agatcacgcc actgcactcc agcctggcaa cagagcgaga ctccatctca 2200
 aaaaaaaaaa aaa 2213

<210> 130
 <211> 335
 <212> PRT
 <213> Homo sapiens

<400> 130
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 Val Ala Leu Leu Ile Val Cys Asp Val Pro Ser Ala Ser Ala Gln
 20 25 30
 Arg Lys Lys Glu Met Val Leu Ser Glu Lys Val Ser Gln Leu Met
 35 40 45
 Glu Trp Thr Asn Lys Arg Pro Val Ile Arg Met Asn Gly Asp Lys
 50 55 60
 Phe Arg Arg Leu Val Lys Ala Pro Pro Arg Asn Tyr Ser Val Ile
 65 70 75
 Val Met Phe Thr Ala Leu Gln Leu His Arg Gln Cys Val Val Cys
 80 85 90
 Lys Gln Ala Asp Glu Glu Phe Gln Ile Leu Ala Asn Ser Trp Arg
 95 100 105

Tyr Ser Ser Ala Phe Thr Asn Arg Ile Phe Phe Ala Met Val Asp
110 115 120

Phe Asp Glu Gly Ser Asp Val Phe Gln Met Leu Asn Met Asn Ser
125 130 135

Ala Pro Thr Phe Ile Asn Phe Pro Ala Lys Gly Lys Pro Lys Arg
140 145 150

Gly Asp Thr Tyr Glu Leu Gln Val Arg Gly Phe Ser Ala Glu Gln
155 160 165

Ile Ala Arg Trp Ile Ala Asp Arg Thr Asp Val Asn Ile Arg Val
170 175 180

Ile Arg Pro Pro Asn Tyr Ala Gly Pro Leu Met Leu Gly Leu Leu
185 190 195

Leu Ala Val Ile Gly Gly Leu Val Tyr Leu Arg Arg Ser Asn Met
200 205 210

Glu Phe Leu Phe Asn Lys Thr Gly Trp Ala Phe Ala Ala Leu Cys
215 220 225

Phe Val Leu Ala Met Thr Ser Gly Gln Met Trp Asn His Ile Arg
230 235 240

Gly Pro Pro Tyr Ala His Lys Asn Pro His Thr Gly His Val Asn
245 250 255

Tyr Ile His Gly Ser Ser Gln Ala Gln Phe Val Ala Glu Thr His
260 265 270

Ile Val Leu Leu Phe Asn Gly Gly Val Thr Leu Gly Met Val Leu
275 280 285

Leu Cys Glu Ala Ala Thr Ser Asp Met Asp Ile Gly Lys Arg Lys
290 295 300

Ile Met Cys Val Ala Gly Ile Gly Leu Val Val Leu Phe Phe Ser
305 310 315

Trp Met Leu Ser Ile Phe Arg Ser Lys Tyr His Gly Tyr Pro Tyr
320 325 330

Ser Phe Leu Met Ser
335

<210> 131
<211> 2476
<212> DNA
<213> Homo sapiens

<400> 131
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tcagaaccgc taccggcgat gctactgctg tgggtgtcgg tggtcgcagc 150
cttggcgctg gcggtactgg cccccggagc aggggagcag aggcggagag 200
cagccaaagc gcccaatgtg gtgctggctg tgagcgactc cttcgatgga 250
aggttaacat ttcattccagg aagtcaggta gtgaaacttc cttttatcaa 300
ctttatgaag acacgtggga cttcctttct gaatgcctac acaaactctc 350
caatttggtg cccatcacgc gcagcaatgt ggagtggcct cttcactcac 400
ttaacagaat cttggaataa ttttaagggt ctagatccaa attatacaac 450
atggatggat gtcattggaga ggcatggcta ccgaacacag aaatttgagg 500
aactggacta tacttcagga catcactcca ttagtaatcg tgtggaagcg 550
tggacaagag atgttgcttt cttactcaga caagaaggca ggcccatggg 600
taatcttatt cgtaacagga ctaaagtcag agtgatggaa agggattggc 650
agaatacaga caaagcagta aactgggtta gaaaggaagc aattaattac 700
actgaaccat ttgttattta cttgggatta aatttaccac acccttacc 750
ttcaccatct tctggagaaa attttggatc ttcaacattt cacacatctc 800
tttattggct tgaaaaagtg tctcatgatg ccatcaaaat cccaaagtgg 850
tcacctttgt cagaaatgca ccctgtagat tattactctt cttatacaaa 900
aaactgcact ggaagattta caaaaaaga aattaagaat attagagcat 950
tttattatgc tatgtgtgct gagacagatg ccatgcttgg tgaaattatt 1000
ttggcccttc atcaattaga tcttcttcag aaaactattg tcatatactc 1050
ctcagaccat ggagagctgg ccatggaaca tcgacagttt tataaaatga 1100
gcatgtacga ggctagtga catgttccgc ttttgatgat gggaccagga 1150
attaaagccg gcctacaagt atcaaatgtg gtttctcttg tggatattta 1200
ccctaccatg cttgatattg ctggaattcc tctgcctcag aacctgagtg 1250
gatactcttt gttgccgtta tcatcagaaa catttaagaa tgaacataaa 1300
gtcaaaaacc tgcattccacc ctggattctg agtgaattcc atggatgtaa 1350
tgtgaatgcc tccacctaca tgcttcgaac taacctctgg aaatatatag 1400
cctattcgga tgggtgcatc atattgcctc aactctttga tctttcctcg 1450
gatccagatg aattaacaaa tgttgctgta aaatttccag aaattactta 1500
ttctttggat cagaagcttc attcattat aaactaccct aaagtttctg 1550

cttctgtcca ccagtataat aaagagcagt ttatcaagtg gaaacaaagt 1600
ataggacaga attattcaaa cgttatagca aatcttaggt ggcaccaaga 1650
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aaacccatat gaatccaaga gcagtttgaa caaaaagttt aaaaatagtg 1750
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atgaaacagt ttttaataatt accaagtttt ggccggggcac agtggctcac 1850
acctgtaatc ccaggacttt gggagggtga ggaaagcaga tcacaaggctc 1900
aagagattga gaccatcctg gccaacatgg tgaaaccctg tctctactaa 1950
aaatacaaaa attagctggg cgcgggtggg cacacctata gtctcagcta 2000
ctcagagggt gaggcaggag gatcgcttga acccgggagg cagcagttgc 2050
agtgagctga gattgcgcca ctgtactcca gcctggcaac agagtgagac 2100
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tattttgtaa gaatgtagtg tattttaaga taaaatgcc aatgattataa 2200
aatcacatat tttcaaaaat ggttattatt taggcctttg tacaatttct 2250
aacaatttag tggaagtatc aaaaggattg aagcaaatac tgtaacagtt 2300
atgttccttt aaataataga gaatataaaa tattgtaata atatgtatca 2350
taaaatagtt gtatgtgagc atttgatggg gaaaaaaaaa aaaaaaaaaa 2400
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2450
aaaaaaaaaa aaaaaaaaaa aaaaaa 2476

<210> 132
<211> 536
<212> PRT
<213> Homo sapiens

<400> 132
Met Leu Leu Leu Trp Val Ser Val Val Ala Ala Leu Ala Leu Ala
1 5 10 15
Val Leu Ala Pro Gly Ala Gly Glu Gln Arg Arg Arg Ala Ala Lys
20 25 30
Ala Pro Asn Val Val Leu Val Val Ser Asp Ser Phe Asp Gly Arg
35 40 45
Leu Thr Phe His Pro Gly Ser Gln Val Val Lys Leu Pro Phe Ile
50 55 60
Asn Phe Met Lys Thr Arg Gly Thr Ser Phe Leu Asn Ala Tyr Thr
65 70 75

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asn | Ser | Pro | Ile | Cys | Cys | Pro | Ser | Arg | Ala | Ala | Met | Trp | Ser | Gly | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Phe | Thr | His | Leu | Thr | Glu | Ser | Trp | Asn | Asn | Phe | Lys | Gly | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Asp | Pro | Asn | Tyr | Thr | Thr | Trp | Met | Asp | Val | Met | Glu | Arg | His | Gly | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Tyr | Arg | Thr | Gln | Lys | Phe | Gly | Lys | Leu | Asp | Tyr | Thr | Ser | Gly | His | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| His | Ser | Ile | Ser | Asn | Arg | Val | Glu | Ala | Trp | Thr | Arg | Asp | Val | Ala | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Leu | Leu | Arg | Gln | Glu | Gly | Arg | Pro | Met | Val | Asn | Leu | Ile | Arg | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Asn | Arg | Thr | Lys | Val | Arg | Val | Met | Glu | Arg | Asp | Trp | Gln | Asn | Thr | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Asp | Lys | Ala | Val | Asn | Trp | Leu | Arg | Lys | Glu | Ala | Ile | Asn | Tyr | Thr | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Glu | Pro | Phe | Val | Ile | Tyr | Leu | Gly | Leu | Asn | Leu | Pro | His | Pro | Tyr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Pro | Ser | Pro | Ser | Ser | Gly | Glu | Asn | Phe | Gly | Ser | Ser | Thr | Phe | His | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Thr | Ser | Leu | Tyr | Trp | Leu | Glu | Lys | Val | Ser | His | Asp | Ala | Ile | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ile | Pro | Lys | Trp | Ser | Pro | Leu | Ser | Glu | Met | His | Pro | Val | Asp | Tyr | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Tyr | Ser | Ser | Tyr | Thr | Lys | Asn | Cys | Thr | Gly | Arg | Phe | Thr | Lys | Lys | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Glu | Ile | Lys | Asn | Ile | Arg | Ala | Phe | Tyr | Tyr | Ala | Met | Cys | Ala | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Thr | Asp | Ala | Met | Leu | Gly | Glu | Ile | Ile | Leu | Ala | Leu | His | Gln | Leu | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Asp | Leu | Leu | Gln | Lys | Thr | Ile | Val | Ile | Tyr | Ser | Ser | Asp | His | Gly | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Glu | Leu | Ala | Met | Glu | His | Arg | Gln | Phe | Tyr | Lys | Met | Ser | Met | Tyr | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Glu | Ala | Ser | Ala | His | Val | Pro | Leu | Leu | Met | Met | Gly | Pro | Gly | Ile | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Lys | Ala | Gly | Leu | Gln | Val | Ser | Asn | Val | Val | Ser | Leu | Val | Asp | Ile | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Tyr | Pro | Thr | Met | Leu | Asp | Ile | Ala | Gly | Ile | Pro | Leu | Pro | Gln | Asn | |

| | | |
|---|-----|-----|
| 365 | 370 | 375 |
| Leu Ser Gly Tyr Ser Leu Leu Pro Leu Ser Ser Glu Thr Phe Lys | | |
| 380 | 385 | 390 |
| Asn Glu His Lys Val Lys Asn Leu His Pro Pro Trp Ile Leu Ser | | |
| 395 | 400 | 405 |
| Glu Phe His Gly Cys Asn Val Asn Ala Ser Thr Tyr Met Leu Arg | | |
| 410 | 415 | 420 |
| Thr Asn His Trp Lys Tyr Ile Ala Tyr Ser Asp Gly Ala Ser Ile | | |
| 425 | 430 | 435 |
| Leu Pro Gln Leu Phe Asp Leu Ser Ser Asp Pro Asp Glu Leu Thr | | |
| 440 | 445 | 450 |
| Asn Val Ala Val Lys Phe Pro Glu Ile Thr Tyr Ser Leu Asp Gln | | |
| 455 | 460 | 465 |
| Lys Leu His Ser Ile Ile Asn Tyr Pro Lys Val Ser Ala Ser Val | | |
| 470 | 475 | 480 |
| His Gln Tyr Asn Lys Glu Gln Phe Ile Lys Trp Lys Gln Ser Ile | | |
| 485 | 490 | 495 |
| Gly Gln Asn Tyr Ser Asn Val Ile Ala Asn Leu Arg Trp His Gln | | |
| 500 | 505 | 510 |
| Asp Trp Gln Lys Glu Pro Arg Lys Tyr Glu Asn Ala Ile Asp Gln | | |
| 515 | 520 | 525 |
| Trp Leu Lys Thr His Met Asn Pro Arg Ala Val | | |
| 530 | 535 | |

<210> 133
 <211> 1475
 <212> DNA
 <213> Homo sapiens

<400> 133
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 gcttctactg agaggtctgc catggcctct cttggcctcc aacttgtggg 150
 ctacatccta ggccttctgg ggcttttggg cacactgggt gccatgctgc 200
 tccccagctg gaaaacaagt tcttatgtcg gtgccagcat tgtgacagca 250
 gttggcttct ccaagggcct ctggatggaa tgtgccacac acagcacagg 300
 catcaccag tgtgacatct atagaccct tctgggcctg cccgtgaca 350
 tccaggctgc ccaggccatg atggtgacat ccagtgcaat ctccctccctg 400
 gcctgcatta tctctgtggt gggcatgaga tgcacagtct tctgccagga 450

atcccagagcc aaagacagag tggcggtagc aggtggagtc tttttcatcc 500
 ttggaggcct cctgggattc attcctgttg cctggaatct tcatgggatac 550
 ctacgggact tctactcacc actggtgcct gacagcatga aatttgagat 600
 tggagaggct ctttacttgg gcattatttc ttccctgttc tccctgatag 650
 ctggaatcat cctctgcttt tcctgctcat cccagagaaa tcgctccaac 700
 tactacgatg cctaccaagc ccaacctctt gccacaagga gctctccaag 750
 gcctgggtcaa cctcccaaag tcaagagtga gttcaattcc tacagcctga 800
 cagggtatgt gtgaagaacc aggggccaga gctgggggggt ggctgggtct 850
 gtgaaaaaca gtggacagca ccccaggggc cacagggtgag ggacactacc 900
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 gagaagcagt ggcttttgtg ggcatgtctc taacctactt ctcaagcttc 1300
 cctccaaaga aactgattgg ccttgggaacc tccatcccac tcttgttatg 1350
 actccacagt gtccagacta atttggtgcat gaactgaaat aaaaccatcc 1400
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 gcagcctggg acatttaaaa aaata 1475

<210> 134
 <211> 230
 <212> PRT
 <213> Homo sapiens

<400> 134
 Met Ala Ser Leu Gly Leu Gln Leu Val Gly Tyr Ile Leu Gly Leu
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 Leu Gly Leu Leu Gly Thr Leu Val Ala Met Leu Leu Pro Ser Trp
 20 25 30
 Lys Thr Ser Ser Tyr Val Gly Ala Ser Ile Val Thr Ala Val Gly
 35 40 45
 Phe Ser Lys Gly Leu Trp Met Glu Cys Ala Thr His Ser Thr Gly

| 50 | 55 | 60 |
|-------------------------|-----------------------------|-------------------------|
| Ile Thr Gln Cys Asp 65 | Ile Tyr Ser Thr Leu 70 | Leu Gly Leu Pro Ala 75 |
| Asp Ile Gln Ala Ala 80 | Gln Ala Met Met Val 85 | Thr Ser Ser Ala Ile 90 |
| Ser Ser Leu Ala Cys 95 | Ile Ile Ser Val Val 100 | Gly Met Arg Cys Thr 105 |
| Val Phe Cys Gln Glu 110 | Ser Arg Ala Lys Asp 115 | Arg Val Ala Val Ala 120 |
| Gly Gly Val Phe Phe 125 | Ile Leu Gly Gly Leu 130 | Leu Gly Phe Ile Pro 135 |
| Val Ala Trp Asn Leu 140 | His Gly Ile Leu Arg 145 | Asp Phe Tyr Ser Pro 150 |
| Leu Val Pro Asp Ser 155 | Met Lys Phe Glu Ile 160 | Gly Glu Ala Leu Tyr 165 |
| Leu Gly Ile Ile Ser 170 | Ser Ser Leu Phe Ser Leu 175 | Ile Ala Gly Ile Ile 180 |
| Leu Cys Phe Ser Cys 185 | Ser Ser Gln Arg Asn 190 | Arg Ser Asn Tyr Tyr 195 |
| Asp Ala Tyr Gln Ala 200 | Gln Pro Leu Ala Thr 205 | Arg Ser Ser Pro Arg 210 |
| Pro Gly Gln Pro Pro 215 | Lys Val Lys Ser Glu 220 | Phe Asn Ser Tyr Ser 225 |
| Leu Thr Gly Tyr Val 230 | | |

<210> 135
 <211> 610
 <212> DNA
 <213> Homo sapiens

<400> 135
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 aagtcacgcg tcccgctggc tcagaaccat ggctgtgcca gccggcaccc 150
 aggtgtggag acaagatcta caacccttg gagcagtgtt gttacaatga 200
 cgccatcgtg tccctgagcg agaccgcca atgtgggtccc ccctgcacct 250
 tctggccctg ctttgagctc tgctgtcttg attcctttgg cctcacaac 300
 gattttgttg tgaagctgaa ggttcagggt gtgaattccc agtgccactc 350

atctcccatc tccagtaaat gtgaaagcag aagacgtttt ccctgagaag 400
 acatagaaaag aaaatcaact ttcactaagg catctcagaa acataggcta 450
 aggtaatatg tgtaccagta gagaagcctg aggaatttac aaaatgatgc 500
 agctccaagc cattgtatgg cccatgtggg agactgatgg gacatggaga 550
 atgacagtag attatcagga aataaataaa gtgggttttt caatgtacac 600
 acctgtaaaa 610

<210> 136
 <211> 119
 <212> PRT
 <213> Homo sapiens

<400> 136
 Met Val Pro Arg Ile Phe Ala Pro Ala Tyr Val Ser Val Cys Leu
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 Leu Leu Leu Cys Pro Arg Glu Val Ile Ala Pro Ala Gly Ser Glu
 20 25 30
 Pro Trp Leu Cys Gln Pro Ala Pro Arg Cys Gly Asp Lys Ile Tyr
 35 40 45
 Asn Pro Leu Glu Gln Cys Cys Tyr Asn Asp Ala Ile Val Ser Leu
 50 55 60
 Ser Glu Thr Arg Gln Cys Gly Pro Pro Cys Thr Phe Trp Pro Cys
 65 70 75
 Phe Glu Leu Cys Cys Leu Asp Ser Phe Gly Leu Thr Asn Asp Phe
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 Val Val Lys Leu Lys Val Gln Gly Val Asn Ser Gln Cys His Ser
 95 100 105
 Ser Pro Ile Ser Ser Lys Cys Glu Ser Arg Arg Arg Phe Pro
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<210> 137
 <211> 771
 <212> DNA
 <213> Homo sapiens

<400> 137
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<210> 138
 <211> 110
 <212> PRT
 <213> Homo sapiens

<400> 138
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 Thr Pro Tyr Leu Met Leu Cys Gln Pro His Lys Arg Cys Gly Asp
 35 40 45
 Lys Phe Tyr Asp Pro Leu Gln His Cys Cys Tyr Asp Asp Ala Val
 50 55 60
 Val Pro Leu Ala Arg Thr Gln Thr Cys Gly Asn Cys Thr Phe Arg
 65 70 75
 Val Cys Phe Glu Gln Cys Cys Pro Trp Thr Phe Met Val Lys Leu
 80 85 90
 Ile Asn Gln Asn Cys Asp Ser Ala Arg Thr Ser Asp Asp Arg Leu
 95 100 105
 Cys Arg Ser Val Ser
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<210> 139
 <211> 2044
 <212> DNA
 <213> Homo sapiens

<400> 139

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<210> 140
<211> 311
<212> PRT
<213> Homo sapiens

<400> 140
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Ala Ala Phe Lys Val Ala Thr Pro Tyr Ser Leu Tyr Val Cys Pro
35 40 45
Glu Gly Gln Asn Val Thr Leu Thr Cys Arg Leu Leu Gly Pro Val
50 55 60
Asp Lys Gly His Asp Val Thr Phe Tyr Lys Thr Trp Tyr Arg Ser
65 70 75
Ser Arg Gly Glu Val Gln Thr Cys Ser Glu Arg Arg Pro Ile Arg
80 85 90
Asn Leu Thr Phe Gln Asp Leu His Leu His His Gly Gly His Gln
95 100 105
Ala Ala Asn Thr Ser His Asp Leu Ala Gln Arg His Gly Leu Glu
110 115 120
Ser Ala Ser Asp His His Gly Asn Phe Ser Ile Thr Met Arg Asn
125 130 135
Leu Thr Leu Leu Asp Ser Gly Leu Tyr Cys Cys Leu Val Val Glu

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Ile Arg His His | His Ser Glu His Arg | Val His Gly Ala Met Glu | 140 | 145 | 150 |
| | 155 | 160 | | | |
| Leu Gln Val Gln | Thr Gly Lys Asp Ala | Pro Ser Asn Cys Val Val | | | |
| | 170 | 175 | | | |
| Tyr Pro Ser Ser | Ser Gln Asp Ser Glu | Asn Ile Thr Ala Ala Ala | | | |
| | 185 | 190 | | | |
| Leu Ala Thr Gly | Ala Cys Ile Val Gly | Ile Leu Cys Leu Pro Leu | | | |
| | 200 | 205 | | | |
| Ile Leu Leu Leu | Val Tyr Lys Gln Arg | Gln Ala Ala Ser Asn Arg | | | |
| | 215 | 220 | | | |
| Arg Ala Gln Glu | Leu Val Arg Met Asp | Ser Asn Ile Gln Gly Ile | | | |
| | 230 | 235 | | | |
| Glu Asn Pro Gly | Phe Glu Ala Ser Pro | Pro Ala Gln Gly Ile Pro | | | |
| | 245 | 250 | | | |
| Glu Ala Lys Val | Arg His Pro Leu Ser | Tyr Val Ala Gln Arg Gln | | | |
| | 260 | 265 | | | |
| Pro Ser Glu Ser | Gly Arg His Leu Leu | Ser Glu Pro Ser Thr Pro | | | |
| | 275 | 280 | | | |
| Leu Ser Pro Pro | Gly Pro Gly Asp Val | Phe Phe Pro Ser Leu Asp | | | |
| | 290 | 295 | | | |
| Pro Val Pro Asp | Ser Pro Asn Phe Glu | Val Ile | | | |
| | 305 | 310 | | | |

<210> 141
 <211> 1732
 <212> DNA
 <213> Homo sapiens

<400> 141
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 tctgtggccc ctgtgcctcc gtgtcctttt cgtctccctt cctcccgact 250
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aagcctgcaa agatgaggca agtgagcaat cggatgaaga ggacagtgtg 850
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cattaccctc aaaaaaaaaa aaaaaaaaaa aa 1732

<210> 142
<211> 451
<212> PRT
<213> Homo sapiens
<400> 142

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Pro | Glu | Val | Arg | Val | Leu | Ser | Ser | Leu | Leu | Gly | Leu | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Trp | Phe | Pro | Leu | Asp | Ser | His | Ala | Arg | Ala | Arg | Pro | Asp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Met | Phe | Cys | Leu | Phe | His | Gly | Lys | Arg | Tyr | Ser | Pro | Gly | Glu | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Trp | His | Pro | Tyr | Leu | Glu | Pro | Gln | Gly | Leu | Met | Tyr | Cys | Leu | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Cys | Thr | Cys | Ser | Glu | Gly | Ala | His | Val | Ser | Cys | Tyr | Arg | Leu | His |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Cys | Pro | Pro | Val | His | Cys | Pro | Gln | Pro | Val | Thr | Glu | Pro | Gln | Gln |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Cys | Cys | Pro | Lys | Cys | Val | Glu | Pro | His | Thr | Pro | Ser | Gly | Leu | Arg |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | Pro | Pro | Lys | Ser | Cys | Gln | His | Asn | Gly | Thr | Met | Tyr | Gln | His |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Glu | Ile | Phe | Ser | Ala | His | Glu | Leu | Phe | Pro | Ser | Arg | Leu | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Asn | Gln | Cys | Val | Leu | Cys | Ser | Cys | Thr | Glu | Gly | Gln | Ile | Tyr | Cys |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Gly | Leu | Thr | Thr | Cys | Pro | Glu | Pro | Gly | Cys | Pro | Ala | Pro | Leu | Pro |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Leu | Pro | Asp | Ser | Cys | Cys | Gln | Ala | Cys | Lys | Asp | Glu | Ala | Ser | Glu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gln | Ser | Asp | Glu | Glu | Asp | Ser | Val | Gln | Ser | Leu | His | Gly | Val | Arg |
| | | | | 185 | | | | | 190 | | | | | 195 |
| His | Pro | Gln | Asp | Pro | Cys | Ser | Ser | Asp | Ala | Gly | Arg | Lys | Arg | Gly |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Pro | Gly | Thr | Pro | Ala | Pro | Thr | Gly | Leu | Ser | Ala | Pro | Leu | Ser | Phe |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ile | Pro | Arg | His | Phe | Arg | Pro | Lys | Gly | Ala | Gly | Ser | Thr | Thr | Val |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Ile | Val | Leu | Lys | Glu | Lys | His | Lys | Lys | Ala | Cys | Val | His | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Gly | Lys | Thr | Tyr | Ser | His | Gly | Glu | Val | Trp | His | Pro | Ala | Phe | Arg |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Ala | Phe | Gly | Pro | Leu | Pro | Cys | Ile | Leu | Cys | Thr | Cys | Glu | Asp | Gly |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Arg | Gln | Asp | Cys | Gln | Arg | Val | Thr | Cys | Pro | Thr | Glu | Tyr | Pro | Cys |

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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 693

<210> 144
 <211> 93
 <212> PRT
 <213> Homo sapiens

<400> 144
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 20 25 30
 Gly Glu Arg Arg Lys Gln Glu Met Leu Lys Glu Met Pro Leu Gln
 35 40 45
 Asp Pro Arg Ser Arg Glu Glu Ala Ala Arg Thr Gln Gln Leu Leu
 50 55 60
 Leu Ala Thr Leu Gln Glu Ala Ala Thr Thr Gln Glu Asn Val Ala
 65 70 75
 Trp Arg Lys Asn Trp Met Val Gly Gly Glu Gly Gly Ala Ser Gly
 80 85 90
 Arg Ser Pro

<210> 145
 <211> 1883
 <212> DNA
 <213> Homo sapiens

<400> 145
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 1883

<210> 146
 <211> 406
 <212> PRT
 <213> Homo sapiens

<400> 146
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 35 40 45
 Asp Gln Ser Ser Arg His Ala Ala Glu Leu Arg Asp Phe Lys Asn
 50 55 60
 Lys Met Leu Pro Leu Leu Glu Val Ala Glu Lys Glu Arg Glu Ala
 65 70 75
 Leu Arg Thr Glu Ala Asp Thr Ile Ser Gly Arg Val Asp Arg Leu
 80 85 90
 Glu Arg Glu Val Asp Tyr Leu Glu Thr Gln Asn Pro Ala Leu Pro
 95 100 105
 Cys Val Glu Phe Asp Glu Lys Val Thr Gly Gly Pro Gly Thr Lys
 110 115 120
 Gly Lys Gly Arg Arg Asn Glu Lys Tyr Asp Met Val Thr Asp Cys
 125 130 135
 Gly Tyr Thr Ile Ser Gln Val Arg Ser Met Lys Ile Leu Lys Arg
 140 145 150
 Phe Gly Gly Pro Ala Gly Leu Trp Thr Lys Asp Pro Leu Gly Gln
 155 160 165
 Thr Glu Lys Ile Tyr Val Leu Asp Gly Thr Gln Asn Asp Thr Ala
 170 175 180
 Phe Val Phe Pro Arg Leu Arg Asp Phe Thr Leu Ala Met Ala Ala
 185 190 195
 Arg Lys Ala Ser Arg Val Arg Val Pro Phe Pro Trp Val Gly Thr
 200 205 210
 Gly Gln Leu Val Tyr Gly Gly Phe Leu Tyr Phe Ala Arg Arg Pro
 215 220 225
 Pro Gly Arg Pro Gly Gly Gly Gly Glu Met Glu Asn Thr Leu Gln
 230 235 240
 Leu Ile Lys Phe His Leu Ala Asn Arg Thr Val Val Asp Ser Ser
 245 250 255

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Phe | Pro | Ala | Glu | Gly | Leu | Ile | Pro | Pro | Tyr | Gly | Leu | Thr | Ala |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Asp | Thr | Tyr | Ile | Asp | Leu | Val | Ala | Asp | Glu | Glu | Gly | Leu | Trp | Ala |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Val | Tyr | Ala | Thr | Arg | Glu | Asp | Asp | Arg | His | Leu | Cys | Leu | Ala | Lys |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Leu | Asp | Pro | Gln | Thr | Leu | Asp | Thr | Glu | Gln | Gln | Trp | Asp | Thr | Pro |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Cys | Pro | Arg | Glu | Asn | Ala | Glu | Ala | Ala | Phe | Val | Ile | Cys | Gly | Thr |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Leu | Tyr | Val | Val | Tyr | Asn | Thr | Arg | Pro | Ala | Ser | Arg | Ala | Arg | Ile |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Gln | Cys | Ser | Phe | Asp | Ala | Ser | Gly | Thr | Leu | Thr | Pro | Glu | Arg | Ala |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Ala | Leu | Pro | Tyr | Phe | Pro | Arg | Arg | Tyr | Gly | Ala | His | Ala | Ser | Leu |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Arg | Tyr | Asn | Pro | Arg | Glu | Arg | Gln | Leu | Tyr | Ala | Trp | Asp | Asp | Gly |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Tyr | Gln | Ile | Val | Tyr | Lys | Leu | Glu | Met | Arg | Lys | Lys | Glu | Glu | Glu |
| | | | | 395 | | | | | 400 | | | | | 405 |

Val

<210> 147
 <211> 2052
 <212> DNA
 <213> Homo sapiens

<400> 147
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 catgccgtga ggtccattca cagaacacat ccatggctct catgctcagt 200
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 aggggccagt tctctagcgt ggtccacctc tacagggacg ggaaggacca 400
 gccatttatg cagatgccac agtatcaagg caggacaaaa ctggtgaagg 450
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 ggatttgtcc acagactcca ggacaaacag agacatgcat ggcctgtttg 750
 atgtggagat ctctctgacc gtccaagaga acgccgggag catatcctgt 800
 tccatgcggc atgctcatct gagccgagag gtggaatcca gggtagagat 850
 aggagatacc tttttcgagc ctatatcgtg gcacctggct accaaagtac 900
 tgggaatact ctgctgtggc ctattttttg gcattgttgg actgaagatt 950
 ttcttctcca aattccagtg gaaaatccag gcggaactgg actggagaag 1000
 aaagcacgga caggcagaat tgagagacgc ccggaaacac gcagtggagg 1050
 tgactctgga tccagagacg gctcaccga agctctgcgt ttctgatctg 1100
 aaaactgtaa cccatagaaa agctccccag gaggtgcctc actctgagaa 1150
 gagatttaca aggaagagtg tgggtggcttc tcagagtttc caagcaggga 1200
 aacattactg ggaggtggac ggaggacaca ataaaagggtg gcgcgtggga 1250
 gtgtgccggg atgatgtgga caggaggaag gagtacgtga ctttgtctcc 1300
 cgatcatggg tactgggtcc tcagactgaa tggagaacat ttgtatttca 1350
 cattaaatcc ccgttttata agcgtcttcc ccaggacccc acctacaaaa 1400
 ataggggtct tcctggacta tgagtgtggg accatctcct tcttcaacat 1450
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 atagtcatct gccagtcac ccaggaatca gagaaagagg cctcttggca 1600
 aagggcctct gcaatccag agacaagcaa cagtgagtcc tcctcacagg 1650
 caaccacgcc ctctctcccc aggggtgaaa tgtaggatga atcacatccc 1700
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 atgggagtca ggtgtcatgg ctgccctgag ctgggaggga agaaggctga 1850
 cattacattt agtttgcctc cactccatct ggctaagtga tcttgaaata 1900
 ccacctctca ggtgaagaac cgtcaggaat tcccatctca caggctgtgg 1950

tgtagattaa gtagacaagg aatgtgaata atgcttagat cttattgatg 2000

acagagtgtgta tcctaattggt ttgttcatta tattacactt tcagtaaaaa 2050

aa 2052

<210> 148

<211> 500

<212> PRT

<213> Homo sapiens

<400> 148

Met Ala Leu Met Leu Ser Leu Val Leu Ser Leu Leu Lys Leu Gly
1 5 10 15

Ser Gly Gln Trp Gln Val Phe Gly Pro Asp Lys Pro Val Gln Ala
20 25 30

Leu Val Gly Glu Asp Ala Ala Phe Ser Cys Phe Leu Ser Pro Lys
35 40 45

Thr Asn Ala Glu Ala Met Glu Val Arg Phe Phe Arg Gly Gln Phe
50 55 60

Ser Ser Val Val His Leu Tyr Arg Asp Gly Lys Asp Gln Pro Phe
65 70 75

Met Gln Met Pro Gln Tyr Gln Gly Arg Thr Lys Leu Val Lys Asp
80 85 90

Ser Ile Ala Glu Gly Arg Ile Ser Leu Arg Leu Glu Asn Ile Thr
95 100 105

Val Leu Asp Ala Gly Leu Tyr Gly Cys Arg Ile Ser Ser Gln Ser
110 115 120

Tyr Tyr Gln Lys Ala Ile Trp Glu Leu Gln Val Ser Ala Leu Gly
125 130 135

Ser Val Pro Leu Ile Ser Ile Thr Gly Tyr Val Asp Arg Asp Ile
140 145 150

Gln Leu Leu Cys Gln Ser Ser Gly Trp Phe Pro Arg Pro Thr Ala
155 160 165

Lys Trp Lys Gly Pro Gln Gly Gln Asp Leu Ser Thr Asp Ser Arg
170 175 180

Thr Asn Arg Asp Met His Gly Leu Phe Asp Val Glu Ile Ser Leu
185 190 195

Thr Val Gln Glu Asn Ala Gly Ser Ile Ser Cys Ser Met Arg His
200 205 210

Ala His Leu Ser Arg Glu Val Glu Ser Arg Val Gln Ile Gly Asp
215 220 225

Thr Phe Phe Glu Pro Ile Ser Trp His Leu Ala Thr Lys Val Leu

159

cacccctctt tgggagactg ctggaccctc ttccaccacc tttcaggcgc 450
cgctcggccc ctgcgcgacc acccctccgg cggcggaacg cacttcgacc 500
acctctcagg cgccgaccag acccgcgcgg accacccttt cgacgaccac 550
tggcccgggc cgcaccaccc ctgtagcgac caccgtaccg gcgcccacga 600
ctccccggac cccgaccccc gatctcccca gcagcagcaa cagcagcgtc 650
ctccccaccc cacctgccac cgaggccccc tcttcgcctc ctccagagta 700
tgtatgtaac tgctctgtgg ttggaagcct gaatgtgaat cgctgcaacc 750
agaccacagg gcagtgtgag tgtcggccag gttatcaggg gcttcactgt 800
gaaacctgca aagagggctt ttacctaaat tacacttctg ggctctgtca 850
gccatgtgac tgtagtccac atggagctct cagcataccg tgcaacaggt 900
aagcaacaga ggggtggaact gaagtattt ttatttttagc aagggaaaaa 950
aaaaggctgc tactctcaag gaccatactg gtttaaacia aggaggatga 1000
gggtcataga ttacaaaaat attttatata cttttattct cttactttat 1050
atgttatatt taatgtcagg atttaaaaac atctaattta ctgatttagt 1100
tcttcaaaaag cactagagtc gccaattttt ctctgggata atttctgtaa 1150
atttcatggg aaaaaattat tgaagaataa atctgctttc tggaagggt 1200
ttcaggcatg aaacctgcta ggaggttttag aaatgttctt atgtttatta 1250
atataccatt ggagtttgag gaaatttggt gtttggttta tttttctctc 1300
taatcaaaat tctacatttg tttctttgga catctaaagc ttaacctggg 1350
ggtaccctaa tttatttaac tagtggttag tagactggtt ttactctatt 1400
taccagtaca tttttgagac caaaagtaga ttaagcagga attatcttta 1450
aactattatg ttatttgag gtaatttaat ctagtggaaat aatgtactgt 1500
tatctaagca ttgacctgt actgcactga aagtaattat tctttgacct 1550
tatgtgaggc acttggttt ttgtggacc caagtcaaaa aactgaagag 1600
acagtattaa ataataaaaa aaataatgac aggttatact cagtgttaacc 1650
tgggtataac ccaagatctg ctgccactta cgagctgtgt tccttgggca 1700
agtaatttcc tttcactgag cttgtttctt ctcaagggtt ttgtgaagat 1750
taaataaggt gatatatata aaatgcctag cacatgtcac tcaataaatt 1800
ctgggttggt ttaatttcaa aggaatatta tggactgaaa tgagagaaca 1850

tgttttaaga acttttagct ccttgacaaa gaagtgcctt atacttttagc 1900
 actaaatatt ttaaattgctt tataaatgat attatactgt tatggaatat 1950
 tgtatcatat tgtagtttat taaaaatgta gaagaggctg ggcgcggtgg 2000
 ctcacgcctg taatcctagc actttgggag gccaaaggcgg gtggatcact 2050
 tgaggccagg agttctagat gagcctggcc agcacagtga aaccccgctct 2100
 ctactaaaaa tacaaacaaa ttagctgggc gtggtggcac acacctgtag 2150
 tcccagctac tcgggaggct gaggcaggag aatcggttga acccgggagg 2200
 tggaggttgc agtgagctga gatcgcgcca ctgcactcca gcctggtgag 2250
 agagggagac tctgtcttaa aaaaaaaaaa aaaaaaaaaa aaaa 2294

<210> 153
 <211> 258
 <212> PRT
 <213> Homo sapiens

<400> 153
 Met Arg Ser Leu Pro Ser Leu Gly Gly Leu Ala Leu Leu Cys Cys
 1 5 10 15
 Ala Ala Ala Ala Ala Ala Val Ala Ser Ala Ala Ser Ala Gly Asn
 20 25 30
 Val Thr Gly Gly Gly Gly Ala Ala Gly Gln Val Asp Ala Ser Pro
 35 40 45
 Gly Pro Gly Leu Arg Gly Glu Pro Ser His Pro Phe Pro Arg Ala
 50 55 60
 Thr Ala Pro Thr Ala Gln Ala Pro Arg Thr Gly Pro Pro Arg Ala
 65 70 75
 Thr Val His Arg Pro Leu Ala Ala Thr Ser Pro Ala Gln Ser Pro
 80 85 90
 Glu Thr Thr Pro Leu Trp Ala Thr Ala Gly Pro Ser Ser Thr Thr
 95 100 105
 Phe Gln Ala Pro Leu Gly Pro Ser Pro Thr Thr Pro Pro Ala Ala
 110 115 120
 Glu Arg Thr Ser Thr Thr Ser Gln Ala Pro Thr Arg Pro Ala Pro
 125 130 135
 Thr Thr Leu Ser Thr Thr Thr Gly Pro Ala Pro Thr Thr Pro Val
 140 145 150
 Ala Thr Thr Val Pro Ala Pro Thr Thr Pro Arg Thr Pro Thr Pro
 155 160 165
 Asp Leu Pro Ser Ser Ser Asn Ser Ser Val Leu Pro Thr Pro Pro

| | | |
|-----------------|---------------------|-------------------------|
| Ala Thr Glu Ala | Pro Ser Ser Pro Pro | Pro Glu Tyr Val Cys Asn |
| | 185 | 190 195 |
| Cys Ser Val Val | Gly Ser Leu Asn Val | Asn Arg Cys Asn Gln Thr |
| | 200 | 205 210 |
| Thr Gly Gln Cys | Glu Cys Arg Pro Gly | Tyr Gln Gly Leu His Cys |
| | 215 | 220 225 |
| Glu Thr Cys Lys | Glu Gly Phe Tyr Leu | Asn Tyr Thr Ser Gly Leu |
| | 230 | 235 240 |
| Cys Gln Pro Cys | Asp Cys Ser Pro His | Gly Ala Leu Ser Ile Pro |
| | 245 | 250 255 |

Cys Asn Arg

<210> 154
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 154
 aactgctctg tggttggaag cctg 24

<210> 155
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 155
 cagtcacatg gctgacagac ccac 24

<210> 156
 <211> 38
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-38
 <223> Synthetic construct.

<400> 156
 aggttatcag gggcttcact gtgaaacctg caaagagg 38

<210> 157
 <211> 689
 <212> DNA
 <213> Homo sapiens

<400> 157
 tgcggcgcag tgtagacctg ggaggatggg cggcctgctg ctggctgctt 50
 ttctggcttt ggtctcggtg cccagggccc aggccgtgtg gttgggaaga 100
 ctggaccctg agcagcttct tgggccctgg tacgtgcttg cggtggcctc 150
 cccggaaaag ggctttgccca tggagaagga catgaagaac gtcgtggggg 200
 tgggtggtgac cctcactcca gaaaacaacc tgcggacgct gtcctctcag 250
 cacgggctgg gaggggtgtga ccagagtgtc atggacctga taaagcgaaa 300
 ctccggatgg gtgtttgaga atccctcaat aggcgtgctg gagctctggg 350
 tgctggccac caacttcaga gactatgccca tcattctcac tcagctggag 400
 ttccgggacg agcccttcaa caccgtggag ctgtacagtc tgacggagac 450
 agccagccag gaggccatgg ggctcttcac caagtggagc aggagcctgg 500
 gcttctgtgc acagtagcag gccagctgc agaaggacct cacctgtgct 550
 cacaagatcc ttctgtgagt gctgcgtccc cagtagggat ggcgcccaca 600
 gggctctgtg acctcggcca gtgtccaccc acctcgtca gcggtccccg 650
 gggcccagca ccagctcaga ataaagcgat tccacagca 689

<210> 158
 <211> 163
 <212> PRT
 <213> Homo sapiens

<400> 158
 Met Gly Gly Leu Leu Leu Ala Ala Phe Leu Ala Leu Val Ser Val
 1 5 10 15
 Pro Arg Ala Gln Ala Val Trp Leu Gly Arg Leu Asp Pro Glu Gln
 20 25 30
 Leu Leu Gly Pro Trp Tyr Val Leu Ala Val Ala Ser Arg Glu Lys
 35 40 45
 Gly Phe Ala Met Glu Lys Asp Met Lys Asn Val Val Gly Val Val
 50 55 60
 Val Thr Leu Thr Pro Glu Asn Asn Leu Arg Thr Leu Ser Ser Gln
 65 70 75
 His Gly Leu Gly Gly Cys Asp Gln Ser Val Met Asp Leu Ile Lys
 80 85 90

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Asn | Ser | Gly | Trp | Val | Phe | Glu | Asn | Pro | Ser | Ile | Gly | Val | Leu |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Glu | Leu | Trp | Val | Leu | Ala | Thr | Asn | Phe | Arg | Asp | Tyr | Ala | Ile | Ile |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Phe | Thr | Gln | Leu | Glu | Phe | Gly | Asp | Glu | Pro | Phe | Asn | Thr | Val | Glu |
| | | | 125 | | | | | | 130 | | | | | 135 |
| Leu | Tyr | Ser | Leu | Thr | Glu | Thr | Ala | Ser | Gln | Glu | Ala | Met | Gly | Leu |
| | | | 140 | | | | | | 145 | | | | | 150 |
| Phe | Thr | Lys | Trp | Ser | Arg | Ser | Leu | Gly | Phe | Leu | Ser | Gln | | |
| | | | 155 | | | | | | 160 | | | | | |

<210> 159
 <211> 1665
 <212> DNA
 <213> Homo sapiens

<400> 159
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 gtaaactgct gacgatgcag agttccgtga cggtgcagga aggcctgtgt 150
 gtccatgtgc cctgctcctt ctctacccc tcgcatggct ggatttaccc 200
 tggcccagta gttcatggct actggttccg ggaaggggcc aatacagacc 250
 aggatgctcc agtggccaca aacaaccag ctcgggcagt gtgggaggag 300
 actcgggacc gattccacct ccttggggac ccacatacca agaattgcac 350
 cctgagcatc agagatgcca gaagaagtga tgcggggaga tacttctttc 400
 gtatggagaa aggaagtata aaatggaatt ataaacatca ccggctctct 450
 gtgaatgtga cagccttgac ccacaggccc aacatcctca tcccaggcac 500
 cctggagtcc ggctgcccc agaatctgac ctgctctgtg ccctgggcct 550
 gtgagcaggg gacacccct atgatctcct ggataggac ctccgtgtcc 600
 cccctggacc cctccaccac ccgctcctcg gtgctcacc tcatcccaca 650
 gccccaggac catggcacca gcctcacctg tcaggtgacc ttccctgggg 700
 ccagcgtgac cacgaacaag accgtccatc tcaacgtgtc ctaccgcct 750
 cagaacttga ccatgactgt cttccaagga gacggcacag tatccacagt 800
 cttgggaaat ggctcatctc tgtcactccc agagggccag tctctgcgcc 850
 tggctctgtg agttgatgca gttgacagca atccccctgc caggctgagc 900
 ctgagctgga gaggcctgac cctgtgcccc tcacagccct caaacccggg 950

ggtgctggag ctgccttggg tgcacctgag ggatgcagct gaattcacct 1000
 gcagagctca gaacctcttc ggctctcagc aggtctacct gaacgtctcc 1050
 ctgcagagca aagccacatc aggagtgact caggggggtgg tcggggggagc 1100
 tggagccaca gccctgggtct tctgtctcct ctgcgtcatc ttcgttgtag 1150
 tgaggctcctg caggaagaaa tcggcaaggc cagcagcggg cgtggggagat 1200
 acgggcatag aggatgcaaa cgctgtcagg ggttcagcct ctcagggggcc 1250
 cctgactgaa ccttggggcag aagacagtcc cccagaccag cctccccccag 1300
 cttctgcccg ctccctcagtg ggggaaggag agctccagta tgcattccctc 1350
 agcttccaga tgggtgaagcc ttgggactcg cggggacagg aggccactga 1400
 caccgagtag tcggagatca agatccacag atgagaaact gcagagactc 1450
 accctgattg agggatcaca gccctccag gcaagggaga agtcagaggc 1500
 tgattcttgt agaattaaca gccctcaacg tgatgagcta tgataacact 1550
 atgaattatg tgcagagtga aaagcacaca ggcttttagag tcaaagtatc 1600
 tcaaacctga atccacactg tgccctccct tttatttttt taactaaaag 1650
 acagacaaat tccta 1665

<210> 160
 <211> 463
 <212> PRT
 <213> Homo sapiens

<400> 160
 Met Leu Leu Leu Leu Pro Leu Leu Trp Gly Arg Glu Arg Ala
 1 5 10 15
 Glu Gly Gln Thr Ser Lys Leu Leu Thr Met Gln Ser Ser Val Thr
 20 25 30
 Val Gln Glu Gly Leu Cys Val His Val Pro Cys Ser Phe Ser Tyr
 35 40 45
 Pro Ser His Gly Trp Ile Tyr Pro Gly Pro Val Val His Gly Tyr
 50 55 60
 Trp Phe Arg Glu Gly Ala Asn Thr Asp Gln Asp Ala Pro Val Ala
 65 70 75
 Thr Asn Asn Pro Ala Arg Ala Val Trp Glu Glu Thr Arg Asp Arg
 80 85 90
 Phe His Leu Leu Gly Asp Pro His Thr Lys Asn Cys Thr Leu Ser
 95 100 105
 Ile Arg Asp Ala Arg Arg Ser Asp Ala Gly Arg Tyr Phe Phe Arg

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|--|--|--|--|
| | | | | 110 | | | | | 115 | | | | | 120 | | | | |
| Met | Glu | Lys | Gly | Ser 125 | Ile | Lys | Trp | Asn | Tyr 130 | Lys | His | His | Arg | Leu 135 | | | | |
| Ser | Val | Asn | Val | Thr 140 | Ala | Leu | Thr | His | Arg 145 | Pro | Asn | Ile | Leu | Ile 150 | | | | |
| Pro | Gly | Thr | Leu | Glu 155 | Ser | Gly | Cys | Pro | Gln 160 | Asn | Leu | Thr | Cys | Ser 165 | | | | |
| Val | Pro | Trp | Ala | Cys 170 | Glu | Gln | Gly | Thr | Pro 175 | Pro | Met | Ile | Ser | Trp 180 | | | | |
| Ile | Gly | Thr | Ser | Val 185 | Ser | Pro | Leu | Asp | Pro 190 | Ser | Thr | Thr | Arg | Ser 195 | | | | |
| Ser | Val | Leu | Thr | Leu 200 | Ile | Pro | Gln | Pro | Gln 205 | Asp | His | Gly | Thr | Ser 210 | | | | |
| Leu | Thr | Cys | Gln | Val 215 | Thr | Phe | Pro | Gly | Ala 220 | Ser | Val | Thr | Thr | Asn 225 | | | | |
| Lys | Thr | Val | His | Leu 230 | Asn | Val | Ser | Tyr | Pro 235 | Pro | Gln | Asn | Leu | Thr 240 | | | | |
| Met | Thr | Val | Phe | Gln 245 | Gly | Asp | Gly | Thr | Val 250 | Ser | Thr | Val | Leu | Gly 255 | | | | |
| Asn | Gly | Ser | Ser | Leu 260 | Ser | Leu | Pro | Glu | Gly 265 | Gln | Ser | Leu | Arg | Leu 270 | | | | |
| Val | Cys | Ala | Val | Asp 275 | Ala | Val | Asp | Ser | Asn 280 | Pro | Pro | Ala | Arg | Leu 285 | | | | |
| Ser | Leu | Ser | Trp | Arg 290 | Gly | Leu | Thr | Leu | Cys 295 | Pro | Ser | Gln | Pro | Ser 300 | | | | |
| Asn | Pro | Gly | Val | Leu 305 | Glu | Leu | Pro | Trp | Val 310 | His | Leu | Arg | Asp | Ala 315 | | | | |
| Ala | Glu | Phe | Thr | Cys 320 | Arg | Ala | Gln | Asn | Pro 325 | Leu | Gly | Ser | Gln | Gln 330 | | | | |
| Val | Tyr | Leu | Asn | Val 335 | Ser | Leu | Gln | Ser | Lys 340 | Ala | Thr | Ser | Gly | Val 345 | | | | |
| Thr | Gln | Gly | Val | Val 350 | Gly | Gly | Ala | Gly | Ala 355 | Thr | Ala | Leu | Val | Phe 360 | | | | |
| Leu | Ser | Phe | Cys | Val 365 | Ile | Phe | Val | Val | Val 370 | Arg | Ser | Cys | Arg | Lys 375 | | | | |
| Lys | Ser | Ala | Arg | Pro 380 | Ala | Ala | Gly | Val | Gly 385 | Asp | Thr | Gly | Ile | Glu 390 | | | | |
| Asp | Ala | Asn | Ala | Val 395 | Arg | Gly | Ser | Ala | Ser 400 | Gln | Gly | Pro | Leu | Thr 405 | | | | |

Glu Pro Trp Ala Glu Asp Ser Pro Pro Asp Gln Pro Pro Pro Ala
 410 415 420
 Ser Ala Arg Ser Ser Val Gly Glu Gly Glu Leu Gln Tyr Ala Ser
 425 430 435
 Leu Ser Phe Gln Met Val Lys Pro Trp Asp Ser Arg Gly Gln Glu
 440 445 450
 Ala Thr Asp Thr Glu Tyr Ser Glu Ile Lys Ile His Arg
 455 460

<210> 161
 <211> 739
 <212> DNA
 <213> Homo sapiens

<400> 161
 gacgcccagt gacctgccga ggtcggcagc acagagctct ggagatgaag 50
 accctgttcc tgggtgtcac gctcggcctg gccgctgccc tgtccttcac 100
 cctggaggag gaggatatca caggagacctg gtacgtgaag gccatggtgg 150
 tcgataagga ctttcggag gacaggaggc ccaggaaggt gtccccagt 200
 aaggtgacag ccctgggcgg tgggaagttg gaagccacgt tcacctcat 250
 gaggaggagat cgggtgcatcc agaagaaaat cctgatgcgg aagacggagg 300
 agcctggcaa atacagcgcc tatgggggca ggaagctcat gtacctgcag 350
 gagctgccca ggagggacca ctacatcttt tactgcaaag accagcacca 400
 tgggggcctg ctccacatgg gaaagcttgt gggtaggaat tctgatacca 450
 accgggaggc cctggaagaa tttaagaaat tgggtgcagc caagggactc 500
 tcggaggagg acattttcac gccctgcag acgggaagct gcgttcccga 550
 aactaggca gccccgggt ctgcacctcc agagcccacc ctaccaccag 600
 acacagagcc cggaccacct ggacctacc tccagccatg acccttcct 650
 gctcccaccc acctgactcc aaataaagtc cttttcccc aaaaaaaaaa 700
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 739

<210> 162
 <211> 170
 <212> PRT
 <213> Homo sapiens

<400> 162
 Met Lys Thr Leu Phe Leu Gly Val Thr Leu Gly Leu Ala Ala Ala
 1 5 10 15
 Leu Ser Phe Thr Leu Glu Glu Glu Asp Ile Thr Gly Thr Trp Tyr

<210> 165
 <211> 21
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-21
 <223> Synthetic construct.

<400> 165
 gtcctccgga aagtccttat c 21

<210> 166
 <211> 25
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-25
 <223> Synthetic construct.

<400> 166
 gcctagtgtt cggaacgca gcttc 25

<210> 167
 <211> 50
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-50
 <223> Synthetic construct.

<400> 167
 cagggacctg gtacgtgaag gccatggtgg tcgataagga ctttccggag 50

<210> 168
 <211> 45
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-45
 <223> Synthetic construct.

<400> 168
 ctgtccttca ccctggagga ggaggatatc acagggacct ggtac 45

<210> 169
 <211> 1204
 <212> DNA
 <213> Homo sapiens

<400> 169

<210> 170
<211> 250
<212> PRT
<213> Homo sapiens

<400> 170
Met Arg Ile Leu Gln Leu Ile Leu Leu Ala Leu Ala Thr Gly Leu
1 5 10 15

His Ser Gln Pro Trp Gln Ala Ala Leu Phe Glu Lys Thr Arg Leu
35 40 45

Leu Cys Gly Ala Thr Leu Ile Ala Pro Arg Trp Leu Leu Thr Ala
50 55 60

Ala His Cys Leu Lys Pro Arg Tyr Ile Val His Leu Gly Gln His
65 70 75

Asn Leu Gln Lys Glu Glu Gly Cys Glu Gln Thr Arg Thr Ala Thr
80 85 90

Glu Ser Phe Pro His Pro Gly Phe Asn Asn Ser Leu Pro Asn Lys
95 100 105

Asp His Arg Asn Asp Ile Met Leu Val Lys Met Ala Ser Pro Val
110 115 120

Ser Ile Thr Trp Ala Val Arg Pro Leu Thr Leu Ser Ser Arg Cys
125 130 135

Val Thr Ala Gly Thr Ser Cys Leu Ile Ser Gly Trp Gly Ser Thr
140 145 150

Ser Ser Pro Gln Leu Arg Leu Pro His Thr Leu Arg Cys Ala Asn
155 160 165

Ile Thr Ile Ile Glu His Gln Lys Cys Glu Asn Ala Tyr Pro Gly
170 175 180

Asn Ile Thr Asp Thr Met Val Cys Ala Ser Val Gln Glu Gly Gly
185 190 195

Lys Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Asn
200 205 210

Gln Ser Leu Gln Gly Ile Ile Ser Trp Gly Gln Asp Pro Cys Ala
215 220 225

Ile Thr Arg Lys Pro Gly Val Tyr Thr Lys Val Cys Lys Tyr Val
230 235 240

Asp Trp Ile Gln Glu Thr Met Lys Asn Asn
245 250

<210> 171
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 171
ggctgcggga ctggaagtca tcggg 25

<210> 172
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 172
ctccaggcca tgaggattct gcag 24

<210> 173
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 173
cctctggtct gtaaccag 18

<210> 174
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 174
tctgtgatgt tgccggggta ggcg 24

<210> 175
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 175
cgtgtagaca ccaggctttc gggtg 25

<210> 176
<211> 18
<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-18

<223> Synthetic construct.

<400> 176

cccttgatga tcctggtc 18

<210> 177

<211> 50

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-50

<223> Synthetic construct.

<400> 177

aggccatgag gattctgcag ttaatcctgc ttgctctggc aacagggcctt 50

<210> 178

<211> 43

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-43

<223> Synthetic construct.

<400> 178

gagagaccag gatcatcaag gggttcgagt gcaagcctca etc 43

<210> 179

<211> 907

<212> DNA

<213> Homo sapiens

<400> 179

gagcagtgtt ctgctggagc cgatgccaaa aaccatgcat ttcttattca 50

gattcattgt tttcttttat ctgtggggcc tttttactgc tcagagacaa 100

aagaaagagg agagcaccga agaagtgaat atagaagttt tgcacgtcc 150

agaaaactgc tctaagacaa gcaagaagg agacctacta aatgcccatt 200

atgacggcta cctggctaaa gacggctcga aattctactg cagccggaca 250

caaaatgaag gccaccccaa atgggttggt cttggtgttg ggcaagtcac 300

aaaaggccta gacattgcta tgacagatat gtgccctgga gaaaagcgaa 350

aagtagttat acccccttca ttgcatatg gaaaggaagg ctatgcagaa 400

ggcaagattc caccggatgc tacattgatt tttgagattg aactttatgc 450
 tgtgaccaa ggaccacgga gcattgagac atttaaaca atagacatgg 500
 acaatgacag gcagctctct aaagccgaga taaacctcta cttgcaaagg 550
 gaatttgaaa aagatgagaa gccacgtgac aagtcatatc aggatgcagt 600
 tttagaagat atttttaaga agaatgacca tgatggtgat ggcttcattt 650
 ctccaagga atacaatgta taccaacacg atgaactata gcatatttgt 700
 atttctactt ttttttttta gctatttact gtactttatg tataaaacaa 750
 agtcactttt ctccaagttg tatttgctat ttttcccta tgagaagata 800
 ttttgatctc cccaatacat tgattttggt ataataaatg tgaggctgtt 850
 ttgcaaactt aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 900
 aaaaaaa 907

<210> 180
 <211> 222
 <212> PRT
 <213> Homo sapiens

<400> 180
 Met Pro Lys Thr Met His Phe Leu Phe Arg Phe Ile Val Phe Phe
 1 5 10 15
 Tyr Leu Trp Gly Leu Phe Thr Ala Gln Arg Gln Lys Lys Glu Glu
 20 25 30
 Ser Thr Glu Glu Val Lys Ile Glu Val Leu His Arg Pro Glu Asn
 35 40 45
 Cys Ser Lys Thr Ser Lys Lys Gly Asp Leu Leu Asn Ala His Tyr
 50 55 60
 Asp Gly Tyr Leu Ala Lys Asp Gly Ser Lys Phe Tyr Cys Ser Arg
 65 70 75
 Thr Gln Asn Glu Gly His Pro Lys Trp Phe Val Leu Gly Val Gly
 80 85 90
 Gln Val Ile Lys Gly Leu Asp Ile Ala Met Thr Asp Met Cys Pro
 95 100 105
 Gly Glu Lys Arg Lys Val Val Ile Pro Pro Ser Phe Ala Tyr Gly
 110 115 120
 Lys Glu Gly Tyr Ala Glu Gly Lys Ile Pro Pro Asp Ala Thr Leu
 125 130 135
 Ile Phe Glu Ile Glu Leu Tyr Ala Val Thr Lys Gly Pro Arg Ser
 140 145 150

Ile Glu Thr Phe Lys Gln Ile Asp Met Asp Asn Asp Arg Gln Leu
155 160 165

Ser Lys Ala Glu Ile Asn Leu Tyr Leu Gln Arg Glu Phe Glu Lys
170 175 180

Asp Glu Lys Pro Arg Asp Lys Ser Tyr Gln Asp Ala Val Leu Glu
185 190 195

Asp Ile Phe Lys Lys Asn Asp His Asp Gly Asp Gly Phe Ile Ser
200 205 210

Pro Lys Glu Tyr Asn Val Tyr Gln His Asp Glu Leu
215 220

<210> 181
<211> 22
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-22
<223> Synthetic construct.

<400> 181
gtgtttctgct ggagccgatg cc 22

<210> 182
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 182
gacatggaca atgacagg 18

<210> 183
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 183
cctttcagga tgtaggag 18

<210> 184
<211> 18
<212> DNA
<213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-18
 <223> Synthetic construct.

<400> 184
 gatgtctgcc accccaag 18

<210> 185
 <211> 27
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-27
 <223> Synthetic construct.

<400> 185
 gcatcctgat atgacttgct acgtggc 27

<210> 186
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 186
 tacaagaggg aagaggagtt gcac 24

<210> 187
 <211> 52
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-52
 <223> Synthetic construct.

<400> 187
 gccattatg acggctacct ggctaaagac ggctcgaaat tctactgcag 50
 cc 52

<210> 188
 <211> 573
 <212> DNA
 <213> Homo sapiens

<400> 188
 cagaaatgca gggaccattg cttcttccag gcctctgctt tctgctgagc 50
 ctctttggag ctgtgactca gaaaacaaa acttctgtg ctaagtgcc 100

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cccaaatgct tctgtgtca ataacactca ctgcacctgc aaccatggat 150
atacttctgg atctgggcag aaactattca cattcccctt ggagacatgt 200
aacgccaggc atggtggctc ggcctgttaa tcccagttct ttgggaagcc 250
aaggcaggtg gatcacctga ggtcaggagt ttgagaccag cctggccaac 300
atagtgaaac cccgtgtcta ctaaaaatac aaaaatcagc cgggcgtggt 350
ggtgcatgcc tgcaatccca gttactcggg aggctgaggc aggagaatcg 400
cttgaactca ggaggcagaa gttgcagtga acccagatcc tgccattgca 450
ctccagcatg gatgacagag caagactccg tctcaaaaag aaaagatagt 500
ttcttgtttc atttcgcgac tgccctctca gtgtttcctg ggatcccctc 550
ccaaataaag tacttatatt ctc 573

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<210> 189
<211> 74
<212> PRT
<213> Homo sapiens

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<400> 189
Met Gln Gly Pro Leu Leu Leu Pro Gly Leu Cys Phe Leu Leu Ser
  1                      5                      10          15
Leu Phe Gly Ala Val Thr Gln Lys Thr Lys Thr Ser Cys Ala Lys
                20                      25          30
Cys Pro Pro Asn Ala Ser Cys Val Asn Asn Thr His Cys Thr Cys
                35                      40          45
Asn His Gly Tyr Thr Ser Gly Ser Gly Gln Lys Leu Phe Thr Phe
                50                      55          60
Pro Leu Glu Thr Cys Asn Ala Arg His Gly Gly Ser Arg Leu
                65                      70

```

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<210> 190
<211> 24
<212> DNA
<213> Artificial

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```

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

```

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<400> 190
agggaccatt gcttcttcca ggcc 24

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```

<210> 191
<211> 24
<212> DNA
<213> Artificial

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<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

 <400> 191
 cgttacatgt ctccaagggg aatg 24

 <210> 192
 <211> 50
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-50
 <223> Synthetic construct.

 <400> 192
 cctgtgctaa gtgcccccca aatgcttcct gtgtcaataa cactcactgc 50

 <210> 193
 <211> 1091
 <212> DNA
 <213> Homo sapiens

 <400> 193
 caagcaggtc atccccttgg tgaccttcaa agagaagcag agagggcaga 50
 ggtggggggc acagggaaag ggtgacctct gagattcccc ttttccccca 100
 gactttggaa gtgaccacc atggggctca gcatcttttt gtcctgtgt 150
 gttcttgggc tcagccaggc agccacaccg aagattttca atggcactga 200
 gtgtgggcgt aactcacagc cgtggcaggt ggggctgttt gagggcacca 250
 gcctgcgctg cgggggtgtc cttattgacc acaggtgggt cctcacagcg 300
 gctcactgca gcggcagcag gtactgggtg cgctggggg aacacagcct 350
 cagccagctc gactggaccg agcagatccg gcacagcggc ttctctgtga 400
 cccatcccgg ctacctggga gcctcgacga gccacgagca cgacctccgg 450
 ctgctgcggc tgcgctgcc cgtccgcgta accagcagcg ttcaaccctt 500
 gccctgccc aatgactgtg caaccgctgg caccgagtgc cacgtctcag 550
 gctggggcat caccaaccac ccacggaacc cattcccgga tctgctccag 600
 tgcctcaacc tctccatcgt ctcccatgcc acctgccatg gtgtgtatcc 650
 cgggagaatc acgagcaaca tgggtgtgtg aggcggcgtc ccggggcagg 700
 atgcctgcca gggtgattct gggggcccc tgggtgtgtg gggagtcctt 750
 caaggtctgg tgtcctgggg gtctgtgggg ccctgtggac aagatggcat 800

ccctggagtc tacacctata ttgcaagta tgtggactgg atccggatga 850
 tcatgaggaa caactgacct gtttctcca cctccacccc cacccttaa 900
 cttgggtacc cctctggccc tcagagcacc aatatctcct ccatcacttc 950
 ccctagctcc actcttgttg gcctgggaac ttcttggaac tttaactcct 1000
 gccagccctt ctaagaccca cgagcggggt gagagaagtg tgcaatagtc 1050
 tggaataaat ataatgaag gaggggcaaa aaaaaaaaaa a 1091

<210> 194
 <211> 248
 <212> PRT
 <213> Homo sapiens

<400> 194
 Met Gly Leu Ser Ile Phe Leu Leu Leu Cys Val Leu Gly Leu Ser
 1 5 10 15
 Gln Ala Ala Thr Pro Lys Ile Phe Asn Gly Thr Glu Cys Gly Arg
 20 25 30
 Asn Ser Gln Pro Trp Gln Val Gly Leu Phe Glu Gly Thr Ser Leu
 35 40 45
 Arg Cys Gly Gly Val Leu Ile Asp His Arg Trp Val Leu Thr Ala
 50 55 60
 Ala His Cys Ser Gly Ser Arg Tyr Trp Val Arg Leu Gly Glu His
 65 70 75
 Ser Leu Ser Gln Leu Asp Trp Thr Glu Gln Ile Arg His Ser Gly
 80 85 90
 Phe Ser Val Thr His Pro Gly Tyr Leu Gly Ala Ser Thr Ser His
 95 100 105
 Glu His Asp Leu Arg Leu Leu Arg Leu Arg Leu Pro Val Arg Val
 110 115 120
 Thr Ser Ser Val Gln Pro Leu Pro Leu Pro Asn Asp Cys Ala Thr
 125 130 135
 Ala Gly Thr Glu Cys His Val Ser Gly Trp Gly Ile Thr Asn His
 140 145 150
 Pro Arg Asn Pro Phe Pro Asp Leu Leu Gln Cys Leu Asn Leu Ser
 155 160 165
 Ile Val Ser His Ala Thr Cys His Gly Val Tyr Pro Gly Arg Ile
 170 175 180
 Thr Ser Asn Met Val Cys Ala Gly Gly Val Pro Gly Gln Asp Ala
 185 190 195
 Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Gly Gly Val Leu

| | | | | | |
|---------------------|---------------------|-------------------------|-----|--|-----|
| | 200 | | 205 | | 210 |
| Gln Gly Leu Val | Ser Trp Gly Ser Val | Gly Pro Cys Gly Gln Asp | | | |
| | 215 | | 220 | | 225 |
| Gly Ile Pro Gly Val | Tyr Thr Tyr Ile | Cys Lys Tyr Val Asp Trp | | | |
| | 230 | | 235 | | 240 |
| Ile Arg Met Ile | Met Arg Asn Asn | | | | |
| | 245 | | | | |

<210> 195
 <211> 1485
 <212> DNA
 <213> Homo sapiens

<400> 195
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 ctcgtccctc gccgcgtccg cgaagcctgg agccggcggg agccccgcgc 100
 tcgccatgtc gggcgagctc agcaacaggt tccaaggagg gaaggcggtc 150
 ggcttgctca aagcccggca ggagaggagg ctggccgaga tcaaccggga 200
 gtttctgtgt gaccagaagt acagtgatga agagaacctt ccagaaaagc 250
 tcacagcctt caaagagaag tacatggagt ttgacctgaa caatgaaggc 300
 gagattgacc tgatgtcttt aaagaggatg atggagaagc ttggtgtccc 350
 caagaccac ctggagatga agaagatgat ctgagagggt acaggagggg 400
 tcagtgaac tatatcctac cgagactttg tgaacatgat gctggggaaa 450
 cggtcggctg tcctcaagtt agtcatgatg tttgaaggaa aagccaacga 500
 gagcagcccc aagccagttg gccccctcc agagagagac attgctagcc 550
 tgccctgagg accccgcctg gactccccag cttcccacc ccatacctcc 600
 ctccgatct tgctgccctt cttgacacac tgtgatctct ctctctctca 650
 tttgtttggt cattgagggg ttgtttgtgt tttcatcaat gtctttgtaa 700
 agcaciaatt atctgcctta aaggggctct gggtcgggga atcctgagcc 750
 ttgggtcccc tcctctctct cttccctcct tccccgctcc ctgtgcagaa 800
 gggctgatat caaaccaaaa actagagggg gcagggccag ggcaggaggg 850
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accaggaca cagccactcg gggccccgct gccccagctg atccccactc 1100
attccacacc tcttctcatc ctcaagtgtg tgaaggtggg aaggaaagga 1150
gcttggcatt gggagccctt caagaaggta ccagaaggaa ccctccagtc 1200
ctgctctctg gccacacctg tgcaggcagc tgagaggcag cgtgcagccc 1250
tactgtccct tactggggca gcagagggct tcggaggcag aagtgaggcc 1300
tggggtttgg ggggaaaggc cagctcagtg ctgttccacc ttttagggag 1350
gatactgagg ggaccaggat gggagaatga ggagtaaaat gctcacggca 1400
aagtcagcag cactggtaag ccaagactga gaaatacaag gttgcttgtc 1450
tgacccaat ctgcttgaaa aaaaaaaaaa aaaaa 1485

<210> 196
<211> 150
<212> PRT
<213> Homo sapiens

<400> 196
Met Ser Gly Glu Leu Ser Asn Arg Phe Gln Gly Gly Lys Ala Phe
1 5 10 15
Gly Leu Leu Lys Ala Arg Gln Glu Arg Arg Leu Ala Glu Ile Asn
20 25 30
Arg Glu Phe Leu Cys Asp Gln Lys Tyr Ser Asp Glu Glu Asn Leu
35 40 45
Pro Glu Lys Leu Thr Ala Phe Lys Glu Lys Tyr Met Glu Phe Asp
50 55 60
Leu Asn Asn Glu Gly Glu Ile Asp Leu Met Ser Leu Lys Arg Met
65 70 75
Met Glu Lys Leu Gly Val Pro Lys Thr His Leu Glu Met Lys Lys
80 85 90
Met Ile Ser Glu Val Thr Gly Gly Val Ser Asp Thr Ile Ser Tyr
95 100 105
Arg Asp Phe Val Asn Met Met Leu Gly Lys Arg Ser Ala Val Leu
110 115 120
Lys Leu Val Met Met Phe Glu Gly Lys Ala Asn Glu Ser Ser Pro
125 130 135
Lys Pro Val Gly Pro Pro Pro Glu Arg Asp Ile Ala Ser Leu Pro
140 145 150

<210> 197
<211> 4842
<212> DNA
<213> Homo sapiens

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gcgcatcagc cagatcaaga gcaagaagtt ccgctgctca ggctccgagg 1550
attaccgcag caggttcagc agcgagtgtc tcatggacct cgtgtgcccc 1600
gagaagtgtc gctgtgaggg caccgattgtg gactgctcca accagaagct 1650
ggctccgcac ccaagccacc tccctgaata tgtcaccgac ctgcgactga 1700
atgacaatga ggtatctgtt ctggaggcca ctggcatctt caagaagttg 1750
cccaacctgc ggaaaataaa tctgagtaac aataagatca aggaggtgcg 1800
agagggagct ttogatggag cagccagcgt gcaggagctg atgctgacag 1850
ggaaccagct ggagaccgtg caccgggcgcg tgttccgtgg cctcagtggc 1900
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cacctttgcc ggocctgagtt cgggtgagact gctgtccctc tatgacaatc 2000
ggatcaccac catcaccctt ggggccttca ccacgcttgt ctccctgtcc 2050
accataaacc tcctgtccaa ccccttcaac tgcaactgcc acctggcctg 2100
gctcggcaag tggttgagga agaggcggat cgtcagtggg aaccctaggt 2150
gccagaagcc atttttcctc aaggagattc ccatccagga tgtggccatc 2200
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gcgctgcccc gagcagtgca cctgtatgga gacagtgggt cgatgcagca 2300
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aaggctcctt caacgacctc acatctcttt cccatctggc gctgggaacc 2650
aaccactcc actgtgactg cagtcttcgg tggctgtcgg agtgggtgaa 2700
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cccgtgcaag aataacggga catgcacca ggaccctgtg gagctgtacc 2900

| | | | | | |
|------------|------------|------------|-------------|------------|------|
| gctgtgcctg | cccctacagc | tacaagggca | aggactgcac | tgtgcccac | 2950 |
| aacacctgca | tccagaaccc | ctgtcagcat | ggaggcacct | gccacctgag | 3000 |
| tgacagccac | aaggatgggt | tcagctgctc | ctgccctctg | ggctttgagg | 3050 |
| ggcagcggtg | tgagatcaac | ccagatgact | gtgaggacaa | cgactgcgaa | 3100 |
| aacaatgcc | cctgcgtgga | cgggatcaac | aactacgtgt | gtatctgtcc | 3150 |
| gcctaactac | acaggtgagc | tatgcgacga | ggtgattgac | cactgtgtgc | 3200 |
| ctgagctgaa | cctctgtcag | catgaggcca | agtgcacccc | cctggacaaa | 3250 |
| ggattcagct | gcgagtgtgt | ccctggctac | agcgggaagc | tctgtgagac | 3300 |
| agacaatgat | gactgtgtgg | cccacaagt | ccgccacggg | gccagtgcg | 3350 |
| tggacacaat | caatggctac | acatgcacct | gccccagg | cttcagtgga | 3400 |
| cccttctgtg | aacaccccc | acccatggtc | ctactgcaga | ccagcccatg | 3450 |
| cgaccagtac | gagtgccaga | acggggccca | gtgcatcgtg | gtgcagcagg | 3500 |
| agcccacctg | ccgctgccca | ccaggcttcg | ccggccccag | atgcgagaag | 3550 |
| ctcatcactg | tcaacttcgt | gggcaaagac | tcctacgtgg | aactggcctc | 3600 |
| cgccaaggtc | cgaccccagg | ccaacatctc | cctgcagggtg | gccactgaca | 3650 |
| aggacaacgg | catccttctc | tacaaaggag | acaatgaccc | cctggcactg | 3700 |
| gagctgtacc | agggccacgt | gcggctggtc | tatgacagcc | tgagttcccc | 3750 |
| tccaaccaca | gtgtacagt | tggagacagt | gaatgatggg | cagtttcaca | 3800 |
| gtgtggagct | ggtgacgcta | aaccagaccc | tgaacctagt | agtggacaaa | 3850 |
| ggaactccaa | agagcctggg | gaagctccag | aagcagccag | cagtgggcat | 3900 |
| caacagcccc | ctctaccttg | gaggcatccc | cacctccacc | ggcctctccg | 3950 |
| ccttgcgcca | gggcacggac | cggcctctag | gcggcttcca | cggatgcac | 4000 |
| catgaggtgc | gcatcaacaa | cgagctgcag | gacttcaagg | ccctcccacc | 4050 |
| acagtccttg | ggggtgtcac | caggctgcaa | gtcctgcacc | gtgtgcaagc | 4100 |
| acggcctgtg | ccgctccgtg | gagaaggaca | gcgtggtgtg | cgagtgccgc | 4150 |
| ccaggctgga | ccggcccact | ctgcgaccag | gaggcccggg | accctgcct | 4200 |
| cggccacaga | tgccaccatg | gaaaatgtgt | ggcaactggg | acctcataca | 4250 |
| tgtgcaagt | tgccgagggc | tatggagggg | acttgtgtga | caacaagaat | 4300 |
| gactctgcc | atgcctgctc | agccttcaag | tgtcaccatg | ggcagtgcc | 4350 |

| | | | | | |
|-------------|------------|------------|------------|-------------|------|
| catctcagac | caaggggagc | cctactgcct | gtgccagccc | ggcttttagcg | 4400 |
| gcgagcactg | ccaacaagag | aatccgtgcc | tgggacaagt | agtcagagag | 4450 |
| gtgatccgcc | gccagaaagg | ttatgcatca | tgtgccacag | cctccaaggt | 4500 |
| gcccattcatg | gaatgtcgtg | ggggctgtgg | gccccagtgc | tgccagccca | 4550 |
| cccgagcaa | gcggcgaaa | tacgtcttcc | agtgcacgga | cggtcctcg | 4600 |
| tttgtagaag | aggtggagag | acacttagag | tgcggtgcc | tcgctgttc | 4650 |
| ctaagccctt | gcccgcctgc | ctgccacctc | tcggactcca | gcttgatgga | 4700 |
| gttgggacag | ccatgtggga | cccctggtg | attcagcatg | aaggaaatga | 4750 |
| agctggagag | gaaggtaaag | aagaagagaa | tattaagtat | attgtaaaat | 4800 |
| aaacaaaaaa | tagaacttaa | aaaaaaaaaa | aaaaaaaaaa | aa | 4842 |

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<210> 198
<211> 1523
<212> PRT
<213> Homo sapiens
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|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| <400> | 198 | | | | | | | | | | | | | | |
| Met | Ala | Pro | Gly | Trp | Ala | Gly | Val | Gly | Ala | Ala | Val | Arg | Ala | Arg | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Ala | Leu | Ala | Leu | Ala | Leu | Ala | Ser | Val | Leu | Ser | Gly | Pro | Pro | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Ala | Val | Ala | Cys | Pro | Thr | Lys | Cys | Thr | Cys | Ser | Ala | Ala | Ser | Val | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Asp | Cys | His | Gly | Leu | Gly | Leu | Arg | Ala | Val | Pro | Arg | Gly | Ile | Pro | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Arg | Asn | Ala | Glu | Arg | Leu | Asp | Leu | Asp | Arg | Asn | Asn | Ile | Thr | Arg | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ile | Thr | Lys | Met | Asp | Phe | Ala | Gly | Leu | Lys | Asn | Leu | Arg | Val | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| His | Leu | Glu | Asp | Asn | Gln | Val | Ser | Val | Ile | Glu | Arg | Gly | Ala | Phe | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gln | Asp | Leu | Lys | Gln | Leu | Glu | Arg | Leu | Arg | Leu | Asn | Lys | Asn | Lys | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Leu | Gln | Val | Leu | Pro | Glu | Leu | Leu | Phe | Gln | Ser | Thr | Pro | Lys | Leu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Thr | Arg | Leu | Asp | Leu | Ser | Glu | Asn | Gln | Ile | Gln | Gly | Ile | Pro | Arg | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Lys | Ala | Phe | Arg | Gly | Ile | Thr | Asp | Val | Lys | Asn | Leu | Gln | Leu | Asp | |
| | | | | 155 | | | | | 160 | | | | | 165 | |

[illegible]

| 455 | | | | | 460 | | | | | 465 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Pro | Arg | Arg | Leu | Ala | Asn | Lys | Arg | Ile | Ser | Gln | Ile | Lys | Ser |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Lys | Lys | Phe | Arg | Cys | Ser | Gly | Ser | Glu | Asp | Tyr | Arg | Ser | Arg | Phe |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Ser | Ser | Glu | Cys | Phe | Met | Asp | Leu | Val | Cys | Pro | Glu | Lys | Cys | Arg |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Cys | Glu | Gly | Thr | Ile | Val | Asp | Cys | Ser | Asn | Gln | Lys | Leu | Val | Arg |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Ile | Pro | Ser | His | Leu | Pro | Glu | Tyr | Val | Thr | Asp | Leu | Arg | Leu | Asn |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Asp | Asn | Glu | Val | Ser | Val | Leu | Glu | Ala | Thr | Gly | Ile | Phe | Lys | Lys |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Leu | Pro | Asn | Leu | Arg | Lys | Ile | Asn | Leu | Ser | Asn | Asn | Lys | Ile | Lys |
| | | | | 560 | | | | | 565 | | | | | 570 |
| Glu | Val | Arg | Glu | Gly | Ala | Phe | Asp | Gly | Ala | Ala | Ser | Val | Gln | Glu |
| | | | | 575 | | | | | 580 | | | | | 585 |
| Leu | Met | Leu | Thr | Gly | Asn | Gln | Leu | Glu | Thr | Val | His | Gly | Arg | Val |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Phe | Arg | Gly | Leu | Ser | Gly | Leu | Lys | Thr | Leu | Met | Leu | Arg | Ser | Asn |
| | | | | 605 | | | | | 610 | | | | | 615 |
| Leu | Ile | Ser | Cys | Val | Ser | Asn | Asp | Thr | Phe | Ala | Gly | Leu | Ser | Ser |
| | | | | 620 | | | | | 625 | | | | | 630 |
| Val | Arg | Leu | Leu | Ser | Leu | Tyr | Asp | Asn | Arg | Ile | Thr | Thr | Ile | Thr |
| | | | | 635 | | | | | 640 | | | | | 645 |
| Pro | Gly | Ala | Phe | Thr | Thr | Leu | Val | Ser | Leu | Ser | Thr | Ile | Asn | Leu |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Leu | Ser | Asn | Pro | Phe | Asn | Cys | Asn | Cys | His | Leu | Ala | Trp | Leu | Gly |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Lys | Trp | Leu | Arg | Lys | Arg | Arg | Ile | Val | Ser | Gly | Asn | Pro | Arg | Cys |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Gln | Lys | Pro | Phe | Phe | Leu | Lys | Glu | Ile | Pro | Ile | Gln | Asp | Val | Ala |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Ile | Gln | Asp | Phe | Thr | Cys | Asp | Gly | Asn | Glu | Glu | Ser | Ser | Cys | Gln |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Leu | Ser | Pro | Arg | Cys | Pro | Glu | Gln | Cys | Thr | Cys | Met | Glu | Thr | Val |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Val | Arg | Cys | Ser | Asn | Lys | Gly | Leu | Arg | Ala | Leu | Pro | Arg | Gly | Met |
| | | | | 740 | | | | | 745 | | | | | 750 |

| | | | |
|---|------|------|------|
| Pro Lys Asp Val Thr Glu Leu Tyr Leu Glu Gly Asn His Leu Thr | 755 | 760 | 765 |
| Ala Val Pro Arg Glu Leu Ser Ala Leu Arg His Leu Thr Leu Ile | 770 | 775 | 780 |
| Asp Leu Ser Asn Asn Ser Ile Ser Met Leu Thr Asn Tyr Thr Phe | 785 | 790 | 795 |
| Ser Asn Met Ser His Leu Ser Thr Leu Ile Leu Ser Tyr Asn Arg | 800 | 805 | 810 |
| Leu Arg Cys Ile Pro Val His Ala Phe Asn Gly Leu Arg Ser Leu | 815 | 820 | 825 |
| Arg Val Leu Thr Leu His Gly Asn Asp Ile Ser Ser Val Pro Glu | 830 | 835 | 840 |
| Gly Ser Phe Asn Asp Leu Thr Ser Leu Ser His Leu Ala Leu Gly | 845 | 850 | 855 |
| Thr Asn Pro Leu His Cys Asp Cys Ser Leu Arg Trp Leu Ser Glu | 860 | 865 | 870 |
| Trp Val Lys Ala Gly Tyr Lys Glu Pro Gly Ile Ala Arg Cys Ser | 875 | 880 | 885 |
| Ser Pro Glu Pro Met Ala Asp Arg Leu Leu Leu Thr Thr Pro Thr | 890 | 895 | 900 |
| His Arg Phe Gln Cys Lys Gly Pro Val Asp Ile Asn Ile Val Ala | 905 | 910 | 915 |
| Lys Cys Asn Ala Cys Leu Ser Ser Pro Cys Lys Asn Asn Gly Thr | 920 | 925 | 930 |
| Cys Thr Gln Asp Pro Val Glu Leu Tyr Arg Cys Ala Cys Pro Tyr | 935 | 940 | 945 |
| Ser Tyr Lys Gly Lys Asp Cys Thr Val Pro Ile Asn Thr Cys Ile | 950 | 955 | 960 |
| Gln Asn Pro Cys Gln His Gly Gly Thr Cys His Leu Ser Asp Ser | 965 | 970 | 975 |
| His Lys Asp Gly Phe Ser Cys Ser Cys Pro Leu Gly Phe Glu Gly | 980 | 985 | 990 |
| Gln Arg Cys Glu Ile Asn Pro Asp Asp Cys Glu Asp Asn Asp Cys | 995 | 1000 | 1005 |
| Glu Asn Asn Ala Thr Cys Val Asp Gly Ile Asn Asn Tyr Val Cys | 1010 | 1015 | 1020 |
| Ile Cys Pro Pro Asn Tyr Thr Gly Glu Leu Cys Asp Glu Val Ile | 1025 | 1030 | 1035 |
| Asp His Cys Val Pro Glu Leu Asn Leu Cys Gln His Glu Ala Lys | | | |

[illegible]

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|------|-----|-----|-----|-----|------|
| | | | | 1040 | | | | | | 1045 | | | | | 1050 |
| Cys | Ile | Pro | Leu | Asp | Lys | Gly | Phe | Ser | Cys | Glu | Cys | Val | Pro | Gly | |
| | | | | 1055 | | | | | 1060 | | | | | | 1065 |
| Tyr | Ser | Gly | Lys | Leu | Cys | Glu | Thr | Asp | Asn | Asp | Asp | Cys | Val | Ala | |
| | | | | 1070 | | | | | 1075 | | | | | | 1080 |
| His | Lys | Cys | Arg | His | Gly | Ala | Gln | Cys | Val | Asp | Thr | Ile | Asn | Gly | |
| | | | | 1085 | | | | | 1090 | | | | | | 1095 |
| Tyr | Thr | Cys | Thr | Cys | Pro | Gln | Gly | Phe | Ser | Gly | Pro | Phe | Cys | Glu | |
| | | | | 1100 | | | | | 1105 | | | | | | 1110 |
| His | Pro | Pro | Pro | Met | Val | Leu | Leu | Gln | Thr | Ser | Pro | Cys | Asp | Gln | |
| | | | | 1115 | | | | | 1120 | | | | | | 1125 |
| Tyr | Glu | Cys | Gln | Asn | Gly | Ala | Gln | Cys | Ile | Val | Val | Gln | Gln | Glu | |
| | | | | 1130 | | | | | 1135 | | | | | | 1140 |
| Pro | Thr | Cys | Arg | Cys | Pro | Pro | Gly | Phe | Ala | Gly | Pro | Arg | Cys | Glu | |
| | | | | 1145 | | | | | 1150 | | | | | | 1155 |
| Lys | Leu | Ile | Thr | Val | Asn | Phe | Val | Gly | Lys | Asp | Ser | Tyr | Val | Glu | |
| | | | | 1160 | | | | | 1165 | | | | | | 1170 |
| Leu | Ala | Ser | Ala | Lys | Val | Arg | Pro | Gln | Ala | Asn | Ile | Ser | Leu | Gln | |
| | | | | 1175 | | | | | 1180 | | | | | | 1185 |
| Val | Ala | Thr | Asp | Lys | Asp | Asn | Gly | Ile | Leu | Leu | Tyr | Lys | Gly | Asp | |
| | | | | 1190 | | | | | 1195 | | | | | | 1200 |
| Asn | Asp | Pro | Leu | Ala | Leu | Glu | Leu | Tyr | Gln | Gly | His | Val | Arg | Leu | |
| | | | | 1205 | | | | | 1210 | | | | | | 1215 |
| Val | Tyr | Asp | Ser | Leu | Ser | Ser | Pro | Pro | Thr | Thr | Val | Tyr | Ser | Val | |
| | | | | 1220 | | | | | 1225 | | | | | | 1230 |
| Glu | Thr | Val | Asn | Asp | Gly | Gln | Phe | His | Ser | Val | Glu | Leu | Val | Thr | |
| | | | | 1235 | | | | | 1240 | | | | | | 1245 |
| Leu | Asn | Gln | Thr | Leu | Asn | Leu | Val | Val | Asp | Lys | Gly | Thr | Pro | Lys | |
| | | | | 1250 | | | | | 1255 | | | | | | 1260 |
| Ser | Leu | Gly | Lys | Leu | Gln | Lys | Gln | Pro | Ala | Val | Gly | Ile | Asn | Ser | |
| | | | | 1265 | | | | | 1270 | | | | | | 1275 |
| Pro | Leu | Tyr | Leu | Gly | Gly | Ile | Pro | Thr | Ser | Thr | Gly | Leu | Ser | Ala | |
| | | | | 1280 | | | | | 1285 | | | | | | 1290 |
| Leu | Arg | Gln | Gly | Thr | Asp | Arg | Pro | Leu | Gly | Gly | Phe | His | Gly | Cys | |
| | | | | 1295 | | | | | 1300 | | | | | | 1305 |
| Ile | His | Glu | Val | Arg | Ile | Asn | Asn | Glu | Leu | Gln | Asp | Phe | Lys | Ala | |
| | | | | 1310 | | | | | 1315 | | | | | | 1320 |
| Leu | Pro | Pro | Gln | Ser | Leu | Gly | Val | Ser | Pro | Gly | Cys | Lys | Ser | Cys | |
| | | | | 1325 | | | | | 1330 | | | | | | 1335 |

Thr Val Cys Lys His Gly Leu Cys Arg Ser Val Glu Lys Asp Ser
1340 1345 1350

Val Val Cys Glu Cys Arg Pro Gly Trp Thr Gly Pro Leu Cys Asp
1355 1360 1365

Gln Glu Ala Arg Asp Pro Cys Leu Gly His Arg Cys His His Gly
1370 1375 1380

Lys Cys Val Ala Thr Gly Thr Ser Tyr Met Cys Lys Cys Ala Glu
1385 1390 1395

Gly Tyr Gly Gly Asp Leu Cys Asp Asn Lys Asn Asp Ser Ala Asn
1400 1405 1410

Ala Cys Ser Ala Phe Lys Cys His His Gly Gln Cys His Ile Ser
1415 1420 1425

Asp Gln Gly Glu Pro Tyr Cys Leu Cys Gln Pro Gly Phe Ser Gly
1430 1435 1440

Glu His Cys Gln Gln Glu Asn Pro Cys Leu Gly Gln Val Val Arg
1445 1450 1455

Glu Val Ile Arg Arg Gln Lys Gly Tyr Ala Ser Cys Ala Thr Ala
1460 1465 1470

Ser Lys Val Pro Ile Met Glu Cys Arg Gly Gly Cys Gly Pro Gln
1475 1480 1485

Cys Cys Gln Pro Thr Arg Ser Lys Arg Arg Lys Tyr Val Phe Gln
1490 1495 1500

Cys Thr Asp Gly Ser Ser Phe Val Glu Glu Val Glu Arg His Leu
1505 1510 1515

Glu Cys Gly Cys Leu Ala Cys Ser
1520

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<220>
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<222> 1-24
<223> Synthetic construct.

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<210> 200
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<220>

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<222> 1-24
<223> Synthetic construct.

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<210> 201
<211> 50
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<220>
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<222> 1-50
<223> Synthetic construct.

<400> 201
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<210> 202
<211> 753
<212> DNA
<213> Homo sapiens

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gaatctgcct ttccagttct gtctccggca ggctttgagg atgaaggctg 150
cgggcattct gaccctcatt ggctgcctgg tcacaggcgc cgagtccaaa 200
atctacactc gttgcaaact ggcaaaaata ttctcgaggg ctggcctgga 250
caattactgg ggcttcagcc ttggaaactg gatctgcatg gcatattatg 300
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gactatggca tcttccagat caacagcttc gcgtggtgca gacgcggaaa 400
gctgaaggag aacaaccact gccatgtcgc ctgctcagcc ttgatcactg 450
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cctgtccgag tggaaaaaag gctgtgaggt ttctctaaact ggaactggac 600
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cctgtgtcat cttgtcccg ttcctcccaa tattccttct caaacttggg 700
gagggaaaat taagctatac tttaagaaa ataaatattt ccatttaa 750
gtc 753


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<400> 205
ctcattggct gcctgggtcac aggc 24

<210> 206
<211> 24
<212> DNA
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<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 206
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<210> 207
<211> 24
<212> DNA
<213> Artificial

<220>
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<222> 1-24
<223> Synthetic construct.

<400> 207
tcagtgacca aggtgagca ggcg 24

<210> 208
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<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-47
<223> Synthetic construct.

<400> 208
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<210> 209
<211> 1648
<212> DNA
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ctttttacct tgggtgtctgc ctgtatccca gtgttcaggc tggctagacg 200
gcggaagaag atcctatatt actgtcactt cccagatctg cttctcacca 250

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cacagctgct gtttttaagg aaacattcaa gtccctgtct cacatagacc 400
ctgatgtcct ctatccatct cttaaagtca ccagctttga ctgagttgtt 450
cctgaaaagc tggatgacct agtccccaag gggaaaaaat tcctgctgct 500
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catagcgaga gtgctctgta ttttttttaa gataatttgt atttttgcac 1600
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<211> 323

[illegible]

<400> 210

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 Glu Pro Ser Leu Lys Ala Thr Met Gly Leu Ala Gly Arg Ala Arg
 290 295 300
 Val Lys Glu Lys Phe Ser Pro Glu Ala Phe Thr Glu Gln Leu Tyr
 305 310 315
 Arg Tyr Val Thr Lys Leu Leu Val
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 tctacctcta tccggcttcc agacaagctg caggaattcc agggattact 150
 ccaactgaag aaaaagatgg taatcttcca gatattgtga atagtggaag 200
 tttgcatgag ttcttggtta atttgcatga gagatatggg cctgtggtct 250
 ccttctggtt tggcaggcgc ctctggttga gtttgggcac tgttgatgta 300
 ctgaagcagc atatcaatcc caataagaca tcggaccctt ttgaaaccat 350
 gctgaagtca ttattaaggt atcaatctgg tgggtggcagt gtgagtgaag 400
 accacatgag gaaaaaattg tatgaaaatg gtgtgactga ttctctgaag 450
 agtaactttg ccctcctcct aaagctttca gaagaattat tagataaatg 500
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 aacatcataa aagaacgaaa aggaaggaac ttcagtcaac atattttcat 800
 tgactcctta gtacaaggga accttaatga ccaacagatc ctagaagaca 850
 gtatgatatt ttctctggcc agttgcataa taactgcaaa attgtgtacc 900
 tgggcaatct gttttttaac cacctctgaa gaagttcaaa aaaaattata 950
 tgaagagata aaccaagttt ttggaaatgg tcctgttact ccagagaaaa 1000

| | | | | | |
|-------------|------------|------------|------------|------------|------|
| ttgagcagct | cagatattgt | cagcatgtgc | tttgtgaaac | tgttcgaact | 1050 |
| gccaaactga | ctccagtttc | tgcccagctt | caagatattg | aaggaaaaat | 1100 |
| tgaccgattt | attattccta | gagagaccct | cgtcctttat | gcccttggtg | 1150 |
| tggtacttca | ggatccta | acttggccat | ctccacacaa | gtttgatcca | 1200 |
| gatcggtttg | atgatgaatt | agtaatgaaa | actttttcct | cacttggatt | 1250 |
| ctcaggcaca | caggagtgtc | cagagttgag | gtttgcatat | atggtgacca | 1300 |
| cagtacttct | tagtgtattg | gtgaagagac | tgcacctact | ttctgtggag | 1350 |
| ggacagggtta | ttgaaacaaa | gtatgaactg | gtaacatcat | caagggaaga | 1400 |
| agcttggatc | actgtctcaa | agagatatta | aaattttata | catttaaaat | 1450 |
| cattgttaaa | ttgattgagg | aaaacaacca | tttaaaaaaa | atctatgttg | 1500 |
| aatcctttta | taaaccagta | tcacttttga | atataaacac | ctatttgtac | 1550 |
| ttaa | 1554 | | | | |

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<210> 212
<211> 462
<212> PRT
<213> Homo sapiens
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          20          25          30
Gly Ile Pro Gly Ile Thr Pro Thr Glu Glu Lys Asp Gly Asn Leu
          35          40          45
Pro Asp Ile Val Asn Ser Gly Ser Leu His Glu Phe Leu Val Asn
          50          55          60
Leu His Glu Arg Tyr Gly Pro Val Val Ser Phe Trp Phe Gly Arg
          65          70          75
Arg Leu Val Val Ser Leu Gly Thr Val Asp Val Leu Lys Gln His
          80          85          90
Ile Asn Pro Asn Lys Thr Ser Asp Pro Phe Glu Thr Met Leu Lys
          95          100          105
Ser Leu Leu Arg Tyr Gln Ser Gly Gly Gly Ser Val Ser Glu Asn
          110          115          120
His Met Arg Lys Lys Leu Tyr Glu Asn Gly Val Thr Asp Ser Leu
          125          130          135
Lys Ser Asn Phe Ala Leu Leu Leu Lys Leu Ser Glu Glu Leu Leu

```

| | | |
|-----------------|---------------------|-------------------------|
| Asp Lys Trp Leu | Ser Tyr Pro Glu Thr | Gln His Val Pro Leu Ser |
| 155 | 160 | 165 |
| Gln His Met Leu | Gly Phe Ala Met Lys | Ser Val Thr Gln Met Val |
| 170 | 175 | 180 |
| Met Gly Ser Thr | Phe Glu Asp Asp Gln | Glu Val Ile Arg Phe Gln |
| 185 | 190 | 195 |
| Lys Asn His Gly | Thr Val Trp Ser Glu | Ile Gly Lys Gly Phe Leu |
| 200 | 205 | 210 |
| Asp Gly Ser Leu | Asp Lys Asn Met Thr | Arg Lys Lys Gln Tyr Glu |
| 215 | 220 | 225 |
| Asp Ala Leu Met | Gln Leu Glu Ser Val | Leu Arg Asn Ile Ile Lys |
| 230 | 235 | 240 |
| Glu Arg Lys Gly | Arg Asn Phe Ser Gln | His Ile Phe Ile Asp Ser |
| 245 | 250 | 255 |
| Leu Val Gln Gly | Asn Leu Asn Asp Gln | Gln Ile Leu Glu Asp Ser |
| 260 | 265 | 270 |
| Met Ile Phe Ser | Leu Ala Ser Cys Ile | Ile Thr Ala Lys Leu Cys |
| 275 | 280 | 285 |
| Thr Trp Ala Ile | Cys Phe Leu Thr Thr | Ser Glu Glu Val Gln Lys |
| 290 | 295 | 300 |
| Lys Leu Tyr Glu | Glu Ile Asn Gln Val | Phe Gly Asn Gly Pro Val |
| 305 | 310 | 315 |
| Thr Pro Glu Lys | Ile Glu Gln Leu Arg | Tyr Cys Gln His Val Leu |
| 320 | 325 | 330 |
| Cys Glu Thr Val | Arg Thr Ala Lys Leu | Thr Pro Val Ser Ala Gln |
| 335 | 340 | 345 |
| Leu Gln Asp Ile | Glu Gly Lys Ile Asp | Arg Phe Ile Ile Pro Arg |
| 350 | 355 | 360 |
| Glu Thr Leu Val | Leu Tyr Ala Leu Gly | Val Val Leu Gln Asp Pro |
| 365 | 370 | 375 |
| Asn Thr Trp Pro | Ser Pro His Lys Phe | Asp Pro Asp Arg Phe Asp |
| 380 | 385 | 390 |
| Asp Glu Leu Val | Met Lys Thr Phe Ser | Ser Leu Gly Phe Ser Gly |
| 395 | 400 | 405 |
| Thr Gln Glu Cys | Pro Glu Leu Arg Phe | Ala Tyr Met Val Thr Thr |
| 410 | 415 | 420 |
| Val Leu Leu Ser | Val Leu Val Lys Arg | Leu His Leu Leu Ser Val |
| 425 | 430 | 435 |

Glu Gly Gln Val Ile Glu Thr Lys Tyr Glu Leu Val Thr Ser Ser
440 445 450

Arg Glu Glu Ala Trp Ile Thr Val Ser Lys Arg Tyr
455 460

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<211> 759
<212> DNA
<213> Homo sapiens

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tcagggtctg tgccctctcg cttcctgacg ctcttgccgc atctggtggt 150
cgtcatcacc ttattctggt cccgggacag caacatacag gcctgcctgc 200
ctctcacgtt caccctcgag gagtatgaca agcaggacat tcagctggtg 250
gccgcgtct ctgtcacctt gggcctcttt gcagtggagc tggccggttt 300
cctctcagga gtctccatgt tcaacagcac ccagagcctc atctccattg 350
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aaccttctg attaccttca tgacgggaac ctaaggacga agcctacagg 550
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ttccctcgg aaactgcttc tgctggagga tatgtgttgg aataattacg 650
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<210> 214
<211> 140
<212> PRT
<213> Homo sapiens

<400> 214
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20 25 30
Ser Asn Ile Gln Ala Cys Leu Pro Leu Thr Phe Thr Pro Glu Glu
35 40 45

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Tyr Asp Lys Gln Asp Ile Gln Leu Val Ala Ala Leu Ser Val Thr
      50                      55                      60
Leu Gly Leu Phe Ala Val Glu Leu Ala Gly Phe Leu Ser Gly Val
      65                      70                      75
Ser Met Phe Asn Ser Thr Gln Ser Leu Ile Ser Ile Gly Ala His
      80                      85                      90
Cys Ser Ala Ser Val Ala Leu Ser Phe Phe Ile Phe Glu Arg Trp
      95                      100                     105
Glu Cys Thr Thr Tyr Trp Tyr Ile Phe Val Phe Cys Ser Ala Leu
      110                     115                     120
Pro Ala Val Thr Glu Met Ala Leu Phe Val Thr Val Phe Gly Leu
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Lys Lys Lys Pro Phe
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<210> 215
<211> 697
<212> DNA
<213> Homo sapiens

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<400> 215
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ggcatcagag tgcgccagc acctgagcct gcccttacgc tatgtggtgg 200
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gagccctgag gtccaactat gtgctcaaag gacaccggga tgtgcagcgt 550
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ctaccgctcc cctgaggcc ctgctgatcc gcacccatt cctcccctcc 650
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<210> 216
<211> 196
<212> PRT

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<213> Homo sapiens

<400> 216

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Arg | Arg | Ser | Met | Leu | Leu | Ala | Trp | Ala | Leu | Pro | Ser | Leu | 1 | 5 | 10 | 15 |
| Leu | Arg | Leu | Gly | Ala | Ala | Gln | Glu | Thr | Glu | Asp | Pro | Ala | Cys | Cys | 20 | 25 | 30 | |
| Ser | Pro | Ile | Val | Pro | Arg | Asn | Glu | Trp | Lys | Ala | Leu | Ala | Ser | Glu | 35 | 40 | 45 | |
| Cys | Ala | Gln | His | Leu | Ser | Leu | Pro | Leu | Arg | Tyr | Val | Val | Val | Ser | 50 | 55 | 60 | |
| His | Thr | Ala | Gly | Ser | Ser | Cys | Asn | Thr | Pro | Ala | Ser | Cys | Gln | Gln | 65 | 70 | 75 | |
| Gln | Ala | Arg | Asn | Val | Gln | His | Tyr | His | Met | Lys | Thr | Leu | Gly | Trp | 80 | 85 | 90 | |
| Cys | Asp | Val | Gly | Tyr | Asn | Phe | Leu | Ile | Gly | Glu | Asp | Gly | Leu | Val | 95 | 100 | 105 | |
| Tyr | Glu | Gly | Arg | Gly | Trp | Asn | Phe | Thr | Gly | Ala | His | Ser | Gly | His | 110 | 115 | 120 | |
| Leu | Trp | Asn | Pro | Met | Ser | Ile | Gly | Ile | Ser | Phe | Met | Gly | Asn | Tyr | 125 | 130 | 135 | |
| Met | Asp | Arg | Val | Pro | Thr | Pro | Gln | Ala | Ile | Arg | Ala | Ala | Gln | Gly | 140 | 145 | 150 | |
| Leu | Leu | Ala | Cys | Gly | Val | Ala | Gln | Gly | Ala | Leu | Arg | Ser | Asn | Tyr | 155 | 160 | 165 | |
| Val | Leu | Lys | Gly | His | Arg | Asp | Val | Gln | Arg | Thr | Leu | Ser | Pro | Gly | 170 | 175 | 180 | |
| Asn | Gln | Leu | Tyr | His | Leu | Ile | Gln | Asn | Trp | Pro | His | Tyr | Arg | Ser | 185 | 190 | 195 | |

Pro

<210> 217

<211> 1871

<212> DNA

<213> Homo sapiens

<400> 217

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cctgagcgtg atgaccacga gggccagccc cggccccggg tgcctcgga 200

gcggggccac atctcaccta agtcccgcgc catggccaat tccactctcc 250
tagggctgct ggccccgcct ggggaggctt ggggcattct tgggcagccc 300
cccaaccgcc cgaaccacag cccccacccc tcagccaagg tgaagaaaat 350
ctttggctgg ggcgacttct actccaacat caagacggtg gccctgaacc 400
tgctcgtcac agggaagatt gtggaccatg gcaatgggac cttcagcgtc 450
cattccaac acaatgccac agggcaggga aacatctcca tcagcctcgt 500
gccccccagt aaagctgtag agttccacca ggaacagcag atcttcatcg 550
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ctcctctggg agcatccatg tcccgagag gggccctca acagtcagcc 1650

Ser Cys Ser Gln Pro Phe Lys Val Val Cys Val Tyr Ile Ala Phe
215 220 225

Tyr Ser Thr Asp Tyr Arg Leu Val Gln Lys Val Cys Pro Asp Tyr
230 235 240

Asn Tyr His Ser Asp Thr Pro Tyr Tyr Pro Ser Gly
245 250

<210> 219
<211> 2065
<212> DNA
<213> Homo sapiens

<400> 219
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aagtgtctgg tgggtgtgca ctcgaacccg gccacggact ccaagggctc 500
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ccttctcggc ggtgcggagc accaaccacg agccatccga gatgagcaac 600
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tcacagatta tttgtgtgtg tctgtttcag tatatttgga ttgggactct 1150
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<210> 220
<211> 201
<212> PRT
<213> Homo sapiens

<400> 220
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Leu Val Leu Thr Leu Pro Gly Leu Pro Val Trp Ala Gln Asn Asp
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Thr Glu Pro Ile Val Leu Glu Gly Lys Cys Leu Val Val Cys Asp
35 40 45
Ser Asn Pro Ala Thr Asp Ser Lys Gly Ser Ser Ser Ser Pro Leu
50 55 60

Gly Ile Ser Val Arg Ala Ala Asn Ser Lys Val Ala Phe Ser Ala
65 70 75
Val Arg Ser Thr Asn His Glu Pro Ser Glu Met Ser Asn Lys Thr
80 85 90
Arg Ile Ile Tyr Phe Asp Gln Ile Leu Val Asn Val Gly Asn Phe
95 100 105
Phe Thr Leu Glu Ser Val Phe Val Ala Pro Arg Lys Gly Ile Tyr
110 115 120
Ser Phe Ser Phe His Val Ile Lys Val Tyr Gln Ser Gln Thr Ile
125 130 135
Gln Val Asn Leu Met Leu Asn Gly Lys Pro Val Ile Ser Ala Phe
140 145 150
Ala Gly Asp Lys Asp Val Thr Arg Glu Ala Ala Thr Asn Gly Val
155 160 165
Leu Leu Tyr Leu Asp Lys Glu Asp Lys Val Tyr Leu Lys Leu Glu
170 175 180
Lys Gly Asn Leu Val Gly Gly Trp Gln Tyr Ser Thr Phe Ser Gly
185 190 195
Phe Leu Val Phe Pro Leu
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<210> 221
<211> 20
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-20
<223> Synthetic construct.

<400> 221
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<210> 222
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 222
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<210> 223
<211> 40

<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-40
<223> Synthetic construct.

<400> 223
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<210> 224
<211> 902
<212> DNA
<213> Homo sapiens

<400> 224
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<210> 225
<211> 257
<212> PRT

<211> 3939
 <212> DNA
 <213> Homo sapiens

<400> 226
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| gtccctttgc | aagaggaagg | atggaaggga | caccctcccc | atttcatgcc | 2900 |
| ttgcattttg | cccgctctcc | tccccacaat | gccccagcct | gggacctaag | 2950 |
| gcctcttttt | cctcccatac | tcccactcca | gggcctagtc | tggggcctga | 3000 |
| atctctgtcc | tgtatcaggg | cccagttct | ctttgggctg | tccttggtg | 3050 |
| ccatcactgc | ccattccagt | cagccaggat | ggatgggggt | atgagatttt | 3100 |
| gggggttggc | cagctggtgc | cagacttttg | gtgctaaggc | ctgcaagggg | 3150 |
| cctggggcag | tgcgtattct | cttccctctg | acctgtgctc | agggctggct | 3200 |
| ctttagcaat | gcgctcagcc | caatttgaga | accgccttct | gattcaagag | 3250 |
| gctgaattca | gaggtcacct | cttcattcca | tcagctcca | gactgatgcc | 3300 |
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| ccttcgtccc | acctggtcca | cccagatgc | tgaggatggg | ggagctcagg | 3750 |
| cggggcctct | gctttgggga | tgggaatgtg | ttttctccc | aaacttgttt | 3800 |
| ttatagctct | gcttgaagg | ctgggagatg | aggtgggtct | ggatcttttc | 3850 |
| tcagagcgtc | tccatgctat | ggttgcat | ccgttttcta | tgaatgaatt | 3900 |
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<210> 227

<211> 832

<212> PRT

<213> Homo sapiens

<400> 227

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20 25 30

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35 40 45
Glu Leu Val Asn Ile Tyr Thr Phe Asn His Thr Val Thr Arg Asn
50 55 60
Arg Thr Glu Gly Val Arg Val Ser Val Asn Val Leu Asn Lys Gln
65 70 75
Lys Gly Ala Pro Leu Leu Phe Val Val Arg Gln Lys Glu Ala Val
80 85 90
Val Ser Phe Gln Val Pro Leu Ile Leu Arg Gly Met Phe Gln Arg
95 100 105
Lys Tyr Leu Tyr Gln Lys Val Glu Arg Thr Leu Cys Gln Pro Pro
110 115 120
Thr Lys Asn Glu Ser Glu Ile Gln Phe Phe Tyr Val Asp Val Ser
125 130 135
Thr Leu Ser Pro Val Asn Thr Thr Tyr Gln Leu Arg Val Ser Arg
140 145 150
Met Asp Asp Phe Val Leu Arg Thr Gly Glu Gln Phe Ser Phe Asn
155 160 165
Thr Thr Ala Ala Gln Pro Gln Tyr Phe Lys Tyr Glu Phe Pro Glu
170 175 180
Gly Val Asp Ser Val Ile Val Lys Val Thr Ser Asn Lys Ala Phe
185 190 195
Pro Cys Ser Val Ile Ser Ile Gln Asp Val Leu Cys Pro Val Tyr
200 205 210
Asp Leu Asp Asn Asn Val Ala Phe Ile Gly Met Tyr Gln Thr Met
215 220 225
Thr Lys Lys Ala Ala Ile Thr Val Gln Arg Lys Asp Phe Pro Ser
230 235 240
Asn Ser Phe Tyr Val Val Val Val Val Lys Thr Glu Asp Gln Ala
245 250 255
Cys Gly Gly Ser Leu Pro Phe Tyr Pro Phe Ala Glu Asp Glu Pro
260 265 270
Val Asp Gln Gly His Arg Gln Lys Thr Leu Ser Val Leu Val Ser
275 280 285
Gln Ala Val Thr Ser Glu Ala Tyr Val Ser Gly Met Leu Phe Cys
290 295 300
Leu Gly Ile Phe Leu Ser Phe Tyr Leu Leu Thr Val Leu Leu Ala
305 310 315
Cys Trp Glu Asn Trp Arg Gln Lys Lys Lys Thr Leu Leu Val Ala

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|
| | | | | 320 | | | | | | 325 | | | | | 330 |
| Ile | Asp | Arg | Ala | Cys 335 | Pro | Glu | Ser | Gly | His 340 | Pro | Arg | Val | Leu | Ala 345 | |
| Asp | Ser | Phe | Pro | Gly 350 | Ser | Ser | Pro | Tyr | Glu 355 | Gly | Tyr | Asn | Tyr | Gly 360 | |
| Ser | Phe | Glu | Asn | Val 365 | Ser | Gly | Ser | Thr | Asp 370 | Gly | Leu | Val | Asp | Ser 375 | |
| Ala | Gly | Thr | Gly | Asp 380 | Leu | Ser | Tyr | Gly | Tyr 385 | Gln | Gly | Arg | Ser | Phe 390 | |
| Glu | Pro | Val | Gly | Thr 395 | Arg | Pro | Arg | Val | Asp 400 | Ser | Met | Ser | Ser | Val 405 | |
| Glu | Glu | Asp | Asp | Tyr 410 | Asp | Thr | Leu | Thr | Asp 415 | Ile | Asp | Ser | Asp | Lys 420 | |
| Asn | Val | Ile | Arg | Thr 425 | Lys | Gln | Tyr | Leu | Tyr 430 | Val | Ala | Asp | Leu | Ala 435 | |
| Arg | Lys | Asp | Lys | Arg 440 | Val | Leu | Arg | Lys | Lys 445 | Tyr | Gln | Ile | Tyr | Phe 450 | |
| Trp | Asn | Ile | Ala | Thr 455 | Ile | Ala | Val | Phe | Tyr 460 | Ala | Leu | Pro | Val | Val 465 | |
| Gln | Leu | Val | Ile | Thr 470 | Tyr | Gln | Thr | Val | Val 475 | Asn | Val | Thr | Gly | Asn 480 | |
| Gln | Asp | Ile | Cys | Tyr 485 | Tyr | Asn | Phe | Leu | Cys 490 | Ala | His | Pro | Leu | Gly 495 | |
| Asn | Leu | Ser | Ala | Phe 500 | Asn | Asn | Ile | Leu | Ser 505 | Asn | Leu | Gly | Tyr | Ile 510 | |
| Leu | Leu | Gly | Leu | Leu 515 | Phe | Leu | Leu | Ile | Ile 520 | Leu | Gln | Arg | Glu | Ile 525 | |
| Asn | His | Asn | Arg | Ala 530 | Leu | Leu | Arg | Asn | Asp 535 | Leu | Cys | Ala | Leu | Glu 540 | |
| Cys | Gly | Ile | Pro | Lys 545 | His | Phe | Gly | Leu | Phe 550 | Tyr | Ala | Met | Gly | Thr 555 | |
| Ala | Leu | Met | Met | Glu 560 | Gly | Leu | Leu | Ser | Ala 565 | Cys | Tyr | His | Val | Cys 570 | |
| Pro | Asn | Tyr | Thr | Asn 575 | Phe | Gln | Phe | Asp | Thr 580 | Ser | Phe | Met | Tyr | Met 585 | |
| Ile | Ala | Gly | Leu | Cys 590 | Met | Leu | Lys | Leu | Tyr 595 | Gln | Lys | Arg | His | Pro 600 | |
| Asp | Ile | Asn | Ala | Ser 605 | Ala | Tyr | Ser | Ala | Tyr 610 | Ala | Cys | Leu | Ala | Ile 615 | |

Thr Ala Phe Trp Ile Val Phe Ser Ile Ile His Ile Ile Ala Thr
635 640 645

Leu Leu Leu Ser Thr Gln Leu Tyr Tyr Met Gly Arg Trp Lys Leu
650 655 660

Asp Ser Gly Ile Phe Arg Arg Ile Leu His Val Leu Tyr Thr Asp
665 670 675

Cys Ile Arg Gln Cys Ser Gly Pro Leu Tyr Val Asp Arg Met Val
680 685 690

Leu Leu Val Met Gly Asn Val Ile Asn Trp Ser Leu Ala Ala Tyr
695 700 705

Gly Leu Ile Met Arg Pro Asn Asp Phe Ala Ser Tyr Leu Leu Ala
710 715 720

Ile Gly Ile Cys Asn Leu Leu Leu Tyr Phe Ala Phe Tyr Ile Ile
725 730 735

Met Lys Leu Arg Ser Gly Glu Arg Ile Lys Leu Ile Pro Leu Leu
740 745 750

Cys Ile Val Cys Thr Ser Val Val Trp Gly Phe Ala Leu Phe Phe
755 760 765

Phe Phe Gln Gly Leu Ser Thr Trp Gln Lys Thr Pro Ala Glu Ser
770 775 780

Arg Glu His Asn Arg Asp Cys Ile Leu Leu Asp Phe Phe Asp Asp
785 790 795

His Asp Ile Trp His Phe Leu Ser Ser Ile Ala Met Phe Gly Ser
800 805 810

Phe Leu Val Leu Leu Thr Leu Asp Asp Asp Leu Asp Thr Val Gln
815 820 825

Arg Asp Lys Ile Tyr Val Phe
830

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<211> 2848
<212> DNA
<213> Homo sapiens

<400> 228
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ttgggcgctg gagggcctgt cctgaccatg gtccctgcct ggctgtggct 150
gctttgtgtc tccgtccccc aggctctccc caaggcccag cctgcagagc 200

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 ctggcttcct gctggtgacc agggccctgg accgagagga gcaggcagag 400
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 tccacagcct gtgcttgtgc acgtgaagga tgagaatgac caggtgcccc 500
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 gctgttggtg caggtcaagg acatgggtga ccaggcctca ggccaccagg 800
 ccaactgccac cgtggaagtc tccatcatag agagcacctg ggtgtcccta 850
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 atcccccggg accctttgaa gtgaatgcag agggaaacct ctacgtgacc 1000
 agagagctgg acagagaagc ccaggctgag tacctgtccc aggtgcgggc 1050
 tcagaattcc catggcgagg actatgcggc ccctctggag ctgcacgtgc 1100
 tgggtgatga tgagaatgac aacgtgccta tctgccctcc ccgtgacccc 1150
 acagtcagca tccctgagct cagtccacca ggtactgaag tgactagact 1200
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 caggtggacc ccacttcagg cagtgtgacg ctgggggtgc tcccactccg 1350
 agcaggccag aacatcctgc ttctgggtgct ggccatggac ctggcaggcg 1400
 cagaggggtg cttcagcagc acgtgtgaag tcgaagtcgc agtcacagat 1450
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 cctccctgag gatgtggagc cggggactct ggtggccatg ctaacagcca 1550
 ttgatgctga cctcgagccc gccttccgcc tcatggattt tgccattgag 1600
 aggggagaca cagaagggac ttttggcctg gattgggagc cagactctgg 1650

| | | | | | |
|-------------|------------|------------|------------|-------------|------|
| gcatgttaga | ctcagactct | gcaagaacct | cagttatgag | gcagctccaa | 1700 |
| gtcatgaggt | ggtggtggtg | gtgcagagtg | tggcgaagct | ggtggggcca | 1750 |
| ggcccaggcc | ctggagccac | cgccacggtg | actgtgctag | tggagagagt | 1800 |
| gatgccaccc | ccaagttag | accaggagag | ctacgaggcc | agtgtcccca | 1850 |
| tcagtgtccc | agccggctct | ttcctgctga | ccatccagcc | ctccgacccc | 1900 |
| atcagccgaa | ccctcaggtt | ctccctagtc | aatgactcag | agggtctggct | 1950 |
| ctgcattgag | aaattctccg | gggaggtgca | caccgcccag | tcctctcagg | 2000 |
| gcgcccagcc | tggggacacc | tacacggtgc | ttgtggaggc | ccaggataca | 2050 |
| gccctgactc | ttgccctgt | gccctccaa | tacctctgca | caccccgcca | 2100 |
| agaccatggc | ttgatcgtga | gtggaccagg | caaggacccc | gatctggcca | 2150 |
| gtggggcacgg | tccctacagc | ttcacccttg | gtcccaaccc | cacggtgcaa | 2200 |
| cgggattggc | gcctccagac | tctcaatggt | tcccatgcct | acctcacctt | 2250 |
| ggccctgcat | tgggtggagc | cacgtgaaca | cataatcccc | gtggtggtca | 2300 |
| gccacaatgc | ccagatgtgg | cagctcctgg | ttcgagtgat | cgtgtgtcgc | 2350 |
| tgcaacgtgg | aggggcagtg | catgcgcaag | gtgggccgca | tgaagggcag | 2400 |
| gcccacgaag | ctgtcggcag | tgggcacctt | tgtaggcacc | ctggtagcaa | 2450 |
| taggaatctt | cctcatcctc | attttcacc | actggaccat | gtcaaggaag | 2500 |
| aaggacccgg | atcaaccagc | agacagcgtg | cccctgaagg | cgactgtctg | 2550 |
| aatggcccag | gcagctctag | ctgggagctt | ggcctctggc | tccatctgag | 2600 |
| tcccctggga | gagagcccag | cacccaagat | ccagcagggg | acaggacaga | 2650 |
| gtagaagccc | ctccatctgc | cctgggggtg | aggcaccatc | accatcacca | 2700 |
| ggcatgtctg | cagagcctgg | acaccaactt | tatggactgc | ccatgggagt | 2750 |
| gctccaaatg | tcagggtgtt | tgcccaataa | taaagcccca | gagaactggg | 2800 |
| ctgggcccta | tgggaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaaaag | 2848 |

<210> 229

<211> 807

<212> PRT

<213> Homo sapiens

<400> 229

Met Val Pro Ala Trp Leu Trp Leu Leu Cys Val Ser Val Pro Gln
1 5 10 15

Ala Leu Pro Lys Ala Gln Pro Ala Glu Leu Ser Val Glu Val Pro

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 20 | | | | | 25 | | | | | 30 |
| Glu | Asn | Tyr | Gly | Gly 35 | Asn | Phe | Pro | Leu | Tyr 40 | Leu | Thr | Lys | Leu | Pro 45 |
| Leu | Pro | Arg | Glu | Gly 50 | Ala | Glu | Gly | Gln | Ile 55 | Val | Leu | Ser | Gly | Asp 60 |
| Ser | Gly | Lys | Ala | Thr 65 | Glu | Gly | Pro | Phe | Ala 70 | Met | Asp | Pro | Asp | Ser 75 |
| Gly | Phe | Leu | Leu | Val 80 | Thr | Arg | Ala | Leu | Asp 85 | Arg | Glu | Glu | Gln | Ala 90 |
| Glu | Tyr | Gln | Leu | Gln 95 | Val | Thr | Leu | Glu | Met 100 | Gln | Asp | Gly | His | Val 105 |
| Leu | Trp | Gly | Pro | Gln 110 | Pro | Val | Leu | Val | His 115 | Val | Lys | Asp | Glu | Asn 120 |
| Asp | Gln | Val | Pro | His 125 | Phe | Ser | Gln | Ala | Ile 130 | Tyr | Arg | Ala | Arg | Leu 135 |
| Ser | Arg | Gly | Thr | Arg 140 | Pro | Gly | Ile | Pro | Phe 145 | Leu | Phe | Leu | Glu | Ala 150 |
| Ser | Asp | Arg | Asp | Glu 155 | Pro | Gly | Thr | Ala | Asn 160 | Ser | Asp | Leu | Arg | Phe 165 |
| His | Ile | Leu | Ser | Gln 170 | Ala | Pro | Ala | Gln | Pro 175 | Ser | Pro | Asp | Met | Phe 180 |
| Gln | Leu | Glu | Pro | Arg 185 | Leu | Gly | Ala | Leu | Ala 190 | Leu | Ser | Pro | Lys | Gly 195 |
| Ser | Thr | Ser | Leu | Asp 200 | His | Ala | Leu | Glu | Arg 205 | Thr | Tyr | Gln | Leu | Leu 210 |
| Val | Gln | Val | Lys | Asp 215 | Met | Gly | Asp | Gln | Ala 220 | Ser | Gly | His | Gln | Ala 225 |
| Thr | Ala | Thr | Val | Glu 230 | Val | Ser | Ile | Ile | Glu 235 | Ser | Thr | Trp | Val | Ser 240 |
| Leu | Glu | Pro | Ile | His 245 | Leu | Ala | Glu | Asn | Leu 250 | Lys | Val | Leu | Tyr | Pro 255 |
| His | His | Met | Ala | Gln 260 | Val | His | Trp | Ser | Gly 265 | Gly | Asp | Val | His | Tyr 270 |
| His | Leu | Glu | Ser | His 275 | Pro | Pro | Gly | Pro | Phe 280 | Glu | Val | Asn | Ala | Glu 285 |
| Gly | Asn | Leu | Tyr | Val 290 | Thr | Arg | Glu | Leu | Asp 295 | Arg | Glu | Ala | Gln | Ala 300 |
| Glu | Tyr | Leu | Leu | Gln 305 | Val | Arg | Ala | Gln | Asn 310 | Ser | His | Gly | Glu | Asp 315 |

[illegible]

| | | |
|-----------------|---------------------|-------------------------|
| 605 | 610 | 615 |
| Glu Val His Thr | Ala Gln Ser Leu Gln | Gly Ala Gln Pro Gly Asp |
| 620 | 625 | 630 |
| Thr Tyr Thr Val | Leu Val Glu Ala Gln | Asp Thr Ala Leu Thr Leu |
| 635 | 640 | 645 |
| Ala Pro Val Pro | Ser Gln Tyr Leu Cys | Thr Pro Arg Gln Asp His |
| 650 | 655 | 660 |
| Gly Leu Ile Val | Ser Gly Pro Ser Lys | Asp Pro Asp Leu Ala Ser |
| 665 | 670 | 675 |
| Gly His Gly Pro | Tyr Ser Phe Thr Leu | Gly Pro Asn Pro Thr Val |
| 680 | 685 | 690 |
| Gln Arg Asp Trp | Arg Leu Gln Thr Leu | Asn Gly Ser His Ala Tyr |
| 695 | 700 | 705 |
| Leu Thr Leu Ala | Leu His Trp Val Glu | Pro Arg Glu His Ile Ile |
| 710 | 715 | 720 |
| Pro Val Val Val | Ser His Asn Ala Gln | Met Trp Gln Leu Leu Val |
| 725 | 730 | 735 |
| Arg Val Ile Val | Cys Arg Cys Asn Val | Glu Gly Gln Cys Met Arg |
| 740 | 745 | 750 |
| Lys Val Gly Arg | Met Lys Gly Met Pro | Thr Lys Leu Ser Ala Val |
| 755 | 760 | 765 |
| Gly Ile Leu Val | Gly Thr Leu Val Ala | Ile Gly Ile Phe Leu Ile |
| 770 | 775 | 780 |
| Leu Ile Phe Thr | His Trp Thr Met Ser | Arg Lys Lys Asp Pro Asp |
| 785 | 790 | 795 |
| Gln Pro Ala Asp | Ser Val Pro Leu Lys | Ala Thr Val |
| 800 | 805 | |

<210> 230
 <211> 50
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-50
 <223> Synthetic construct.

<400> 230
 cgccttaccg cgcagcccga agattcacta tgggtgaaaat cgccttcaat 50

<210> 231
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> Artificial Sequence
 <222> full
 <223> Synthetic oligonucleotide probe

<400> 231
 cctgagctgt aacccactc cagg 24

<210> 232
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 232
 agagtctgtc ccagctatct tgt 23

<210> 233
 <211> 2786
 <212> DNA
 <213> Homo sapiens

<400> 233
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 gatgtcctgg tcccatctgt cagtctgcag gcatttaa at ccttctgag 250
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 gtcctgcat tgggtgctgac ccaaatagaa actggaacgc tagttttgca 800
 ggaaagggag ccagcgacaa cccttgctcc gaagtgtacc atggacccca 850

cgccaattcg gaagtggagg tgaaatcagt ggtagatttc atccaaaaac 900
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 <211> 421
 <212> PRT
 <213> Homo sapiens

<400> 234
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 Val Arg Asn Gly Asp Glu Ile Ser Lys Leu Ser Gln Leu Val Asn
 35 40 45
 Ser Asn Asn Leu Lys Leu Asn Phe Trp Lys Ser Pro Ser Ser Phe
 50 55 60
 Asn Arg Pro Val Asp Val Leu Val Pro Ser Val Ser Leu Gln Ala
 65 70 75
 Phe Lys Ser Phe Leu Arg Ser Gln Gly Leu Glu Tyr Ala Val Thr
 80 85 90
 Ile Glu Asp Leu Gln Ala Leu Leu Asp Asn Glu Asp Asp Glu Met
 95 100 105
 Gln His Asn Glu Gly Gln Glu Arg Ser Ser Asn Asn Phe Asn Tyr
 110 115 120
 Gly Ala Tyr His Ser Leu Glu Ala Ile Tyr His Glu Met Asp Asn
 125 130 135
 Ile Ala Ala Asp Phe Pro Asp Leu Ala Arg Arg Val Lys Ile Gly
 140 145 150
 His Ser Phe Glu Asn Arg Pro Met Tyr Val Leu Lys Phe Ser Thr
 155 160 165

Gly Lys Gly Val Arg Arg Pro Ala Val Trp Leu Asn Ala Gly Ile
170 175 180

His Ser Arg Glu Trp Ile Ser Gln Ala Thr Ala Ile Trp Thr Ala
185 190 195

Arg Lys Ile Val Ser Asp Tyr Gln Arg Asp Pro Ala Ile Thr Ser
200 205 210

Ile Leu Glu Lys Met Asp Ile Phe Leu Leu Pro Val Ala Asn Pro
215 220 225

Asp Gly Tyr Val Tyr Thr Gln Thr Gln Asn Arg Leu Trp Arg Lys
230 235 240

Thr Arg Ser Arg Asn Pro Gly Ser Ser Cys Ile Gly Ala Asp Pro
245 250 255

Asn Arg Asn Trp Asn Ala Ser Phe Ala Gly Lys Gly Ala Ser Asp
260 265 270

Asn Pro Cys Ser Glu Val Tyr His Gly Pro His Ala Asn Ser Glu
275 280 285

Val Glu Val Lys Ser Val Val Asp Phe Ile Gln Lys His Gly Asn
290 295 300

Phe Lys Gly Phe Ile Asp Leu His Ser Tyr Ser Gln Leu Leu Met
305 310 315

Tyr Pro Tyr Gly Tyr Ser Val Lys Lys Ala Pro Asp Ala Glu Glu
320 325 330

Leu Asp Lys Val Ala Arg Leu Ala Ala Lys Ala Leu Ala Ser Val
335 340 345

Ser Gly Thr Glu Tyr Gln Val Gly Pro Thr Cys Thr Thr Val Tyr
350 355 360

Pro Ala Ser Gly Ser Ser Ile Asp Trp Ala Tyr Asp Asn Gly Ile
365 370 375

Lys Phe Ala Phe Thr Phe Glu Leu Arg Asp Thr Gly Thr Tyr Gly
380 385 390

Phe Leu Leu Pro Ala Asn Gln Ile Ile Pro Thr Ala Glu Glu Thr
395 400 405

Trp Leu Gly Leu Lys Thr Ile Met Glu His Val Arg Asp Asn Leu
410 415 420

Tyr

<210> 235
<211> 1743
<212> DNA
<213> Homo sapiens

<400> 235

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<210> 236
 <211> 417
 <212> PRT
 <213> Homo sapiens

<400> 236
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 20 25 30
 Pro Arg Pro Ser Ser Thr Lys Ser Thr Pro Ala Ser Gln Val Tyr
 35 40 45
 Ser Leu Asn Thr Asp Phe Ala Phe Arg Leu Tyr Arg Arg Leu Val
 50 55 60
 Leu Glu Thr Pro Ser Gln Asn Ile Phe Phe Ser Pro Val Ser Val
 65 70 75
 Ser Thr Ser Leu Ala Met Leu Ser Leu Gly Ala His Ser Val Thr
 80 85 90
 Lys Thr Gln Ile Leu Gln Gly Leu Gly Phe Asn Leu Thr His Thr
 95 100 105
 Pro Glu Ser Ala Ile His Gln Gly Phe Gln His Leu Val His Ser
 110 115 120
 Leu Thr Val Pro Ser Lys Asp Leu Thr Leu Lys Met Gly Ser Ala
 125 130 135
 Leu Phe Val Lys Lys Glu Leu Gln Leu Gln Ala Asn Phe Leu Gly
 140 145 150
 Asn Val Lys Arg Leu Tyr Glu Ala Glu Val Phe Ser Thr Asp Phe
 155 160 165
 Ser Asn Pro Ser Ile Ala Gln Ala Arg Ile Asn Ser His Val Lys
 170 175 180
 Lys Lys Thr Gln Gly Lys Val Val Asp Ile Ile Gln Gly Leu Asp
 185 190 195
 Leu Leu Thr Ala Met Val Leu Val Asn His Ile Phe Phe Lys Ala

| 200 | | | | | | | | | | 205 | | | | | 210 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Lys | Trp | Glu | Lys | Pro | Phe | His | Leu | Glu | Tyr | Thr | Arg | Lys | Asn | Phe | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Pro | Phe | Leu | Val | Gly | Glu | Gln | Val | Thr | Val | Gln | Val | Pro | Met | Met | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| His | Gln | Lys | Glu | Gln | Phe | Ala | Phe | Gly | Val | Asp | Thr | Glu | Leu | Asn | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Cys | Phe | Val | Leu | Gln | Met | Asp | Tyr | Lys | Gly | Asp | Ala | Val | Ala | Phe | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Phe | Val | Leu | Pro | Ser | Lys | Gly | Lys | Met | Arg | Gln | Leu | Glu | Gln | Ala | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Leu | Ser | Ala | Arg | Thr | Leu | Ile | Lys | Trp | Ser | His | Ser | Leu | Gln | Lys | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Arg | Trp | Ile | Glu | Val | Phe | Ile | Pro | Arg | Phe | Ser | Ile | Ser | Ala | Ser | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Tyr | Asn | Leu | Glu | Thr | Ile | Leu | Pro | Lys | Met | Gly | Ile | Gln | Asn | Ala | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Phe | Asp | Lys | Asn | Ala | Asp | Phe | Ser | Gly | Ile | Ala | Lys | Arg | Asp | Ser | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Leu | Gln | Val | Ser | Lys | Ala | Thr | His | Lys | Ala | Val | Leu | Asp | Val | Ser | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Glu | Glu | Gly | Thr | Glu | Ala | Thr | Ala | Ala | Thr | Thr | Thr | Lys | Phe | Ile | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Val | Arg | Ser | Lys | Asp | Gly | Pro | Ser | Tyr | Phe | Thr | Val | Ser | Phe | Asn | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Arg | Thr | Phe | Leu | Met | Met | Ile | Thr | Asn | Lys | Ala | Thr | Asp | Gly | Ile | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
| Leu | Phe | Leu | Gly | Lys | Val | Glu | Asn | Pro | Thr | Lys | Ser | | | | | | | | |
| | | | | 410 | | | | | 415 | | | | | | | | | | |

<210> 237

<211> 23

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-23

<223> Synthetic construct.

<400> 237

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<210> 238

<211> 47
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-47
 <223> Synthetic construct.

 <400> 238
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 <210> 239
 <211> 24
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

 <400> 239
 tgactcgggg tctccaaaac cagc 24

 <210> 240
 <211> 24
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

 <400> 240
 ggtataggcg gaaggcaaag tcgg 24

 <210> 241
 <211> 48
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-48
 <223> Synthetic construct.

 <400> 241
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 <210> 242
 <211> 2436
 <212> DNA
 <213> Homo sapiens

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gactgccac caactctgag tccagcacia cctccagtgg ggtcagcaca 1450
gccaccaact ctgagtccag cacaacctcc agtggggcta gcacagccac 1500

| | | | | | | | | | | | | | | |
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| Thr | Asn | Ser | Glu | Phe 80 | His | Thr | Thr | Ser | Ser 85 | Gly | Ile | Ser | Thr | Ala 90 |
| Thr | Asn | Ser | Glu | Phe 95 | Ser | Thr | Ala | Ser | Ser 100 | Gly | Ile | Ser | Ile | Ala 105 |
| Thr | Asn | Ser | Glu | Ser 110 | Ser | Thr | Thr | Ser | Ser 115 | Gly | Ala | Ser | Thr | Ala 120 |
| Thr | Asn | Ser | Glu | Ser 125 | Ser | Thr | Pro | Ser | Ser 130 | Gly | Ala | Ser | Thr | Val 135 |
| Thr | Asn | Ser | Gly | Ser 140 | Ser | Val | Thr | Ser | Ser 145 | Gly | Ala | Ser | Thr | Ala 150 |
| Thr | Asn | Ser | Glu | Ser 155 | Ser | Thr | Val | Ser | Ser 160 | Arg | Ala | Ser | Thr | Ala 165 |
| Thr | Asn | Ser | Glu | Ser 170 | Ser | Thr | Leu | Ser | Ser 175 | Gly | Ala | Ser | Thr | Ala 180 |
| Thr | Asn | Ser | Asp | Ser 185 | Ser | Thr | Thr | Ser | Ser 190 | Gly | Ala | Ser | Thr | Ala 195 |
| Thr | Asn | Ser | Glu | Ser 200 | Ser | Thr | Thr | Ser | Ser 205 | Gly | Ala | Ser | Thr | Ala 210 |
| Thr | Asn | Ser | Glu | Ser 215 | Ser | Thr | Val | Ser | Ser 220 | Arg | Ala | Ser | Thr | Ala 225 |
| Thr | Asn | Ser | Glu | Ser 230 | Ser | Thr | Thr | Ser | Ser 235 | Gly | Ala | Ser | Thr | Ala 240 |
| Thr | Asn | Ser | Glu | Ser 245 | Arg | Thr | Thr | Ser | Asn 250 | Gly | Ala | Gly | Thr | Ala 255 |
| Thr | Asn | Ser | Glu | Ser 260 | Ser | Thr | Thr | Ser | Ser 265 | Gly | Ala | Ser | Thr | Ala 270 |
| Thr | Asn | Ser | Asp | Ser 275 | Ser | Thr | Val | Ser | Ser 280 | Gly | Ala | Ser | Thr | Ala 285 |
| Thr | Asn | Ser | Glu | Ser 290 | Ser | Thr | Thr | Ser | Ser 295 | Gly | Ala | Ser | Thr | Ala 300 |
| Thr | Asn | Ser | Glu | Ser 305 | Ser | Thr | Thr | Ser | Ser 310 | Gly | Ala | Ser | Thr | Ala 315 |
| Thr | Asn | Ser | Asp | Ser 320 | Ser | Thr | Thr | Ser | Ser 325 | Gly | Ala | Gly | Thr | Ala 330 |
| Thr | Asn | Ser | Glu | Ser 335 | Ser | Thr | Val | Ser | Ser 340 | Gly | Ile | Ser | Thr | Val 345 |
| Thr | Asn | Ser | Glu | Ser 350 | Ser | Thr | Pro | Ser | Ser 355 | Gly | Ala | Asn | Thr | Ala 360 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Asn | Thr | Ala |

| | 365 | | 370 | | 375 |
|-----------------|---------------------|---------------------|-----|--|-----|
| Thr Asn Ser Glu | Ser Ser Thr Val Ser | Ser Gly Ala Ser Thr | Ala | | |
| | 380 | 385 | 390 | | |
| Thr Asn Ser Glu | Ser Ser Thr Thr Ser | Ser Gly Val Ser Thr | Ala | | |
| | 395 | 400 | 405 | | |
| Thr Asn Ser Glu | Ser Ser Thr Thr Ser | Ser Gly Ala Ser Thr | Ala | | |
| | 410 | 415 | 420 | | |
| Thr Asn Ser Asp | Ser Ser Thr Thr Ser | Ser Glu Ala Ser Thr | Ala | | |
| | 425 | 430 | 435 | | |
| Thr Asn Ser Glu | Ser Ser Thr Val Ser | Ser Gly Ile Ser Thr | Val | | |
| | 440 | 445 | 450 | | |
| Thr Asn Ser Glu | Ser Ser Thr Thr Ser | Ser Gly Ala Asn Thr | Ala | | |
| | 455 | 460 | 465 | | |
| Thr Asn Ser Gly | Ser Ser Val Thr Ser | Ala Gly Ser Gly Thr | Ala | | |
| | 470 | 475 | 480 | | |
| Ala Leu Thr Gly | Met His Thr Thr Ser | His Ser Ala Ser Thr | Ala | | |
| | 485 | 490 | 495 | | |
| Val Ser Glu Ala | Lys Pro Gly Gly Ser | Leu Val Pro Trp Glu | Ile | | |
| | 500 | 505 | 510 | | |
| Phe Leu Ile Thr | Leu Val Ser Val Val | Ala Ala Val Gly Leu | Phe | | |
| | 515 | 520 | 525 | | |
| Ala Gly Leu Phe | Phe Cys Val Arg Asn | Ser Leu Ser Leu Arg | Asn | | |
| | 530 | 535 | 540 | | |
| Thr Phe Asn Thr | Ala Val Tyr His Pro | His Gly Leu Asn His | Gly | | |
| | 545 | 550 | 555 | | |
| Leu Gly Pro Gly | Pro Gly Gly Asn His | Gly Ala Pro His Arg | Pro | | |
| | 560 | 565 | 570 | | |
| Arg Trp Ser Pro | Asn Trp Phe Trp Arg | Arg Pro Val Ser Ser | Ile | | |
| | 575 | 580 | 585 | | |
| Ala Met Glu Met | Ser Gly Arg Asn Ser | Gly Pro | | | |
| | 590 | 595 | | | |

<210> 244
 <211> 26
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-26
 <223> Synthetic construct.

<400> 244

gaagcaccag cctttatctc ttcacc 26

<210> 245
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic sequence.

<400> 245
 gtcagagttg gtggctgtgc tagc 24

<210> 246
 <211> 48
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-48
 <223> Synthetic construct.

<400> 246
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<210> 247
 <211> 957
 <212> DNA
 <213> Homo sapiens

<400> 247
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 agagagaggt gggcaaggcc ctggatggca tcaacagtgg aatcacgcat 250
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<210> 248
 <211> 247
 <212> PRT
 <213> Homo sapiens

<400> 248
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 20 25
 Lys Val Ile Glu Gly Ile Asn Arg Gly Leu Ser Asn Ala Glu Arg 45
 35 40
 Glu Val Gly Lys Ala Leu Asp Gly Ile Asn Ser Gly Ile Thr His 60
 50 55
 Ala Gly Arg Glu Val Glu Lys Val Phe Asn Gly Leu Ser Asn Met 75
 65 70
 Gly Ser His Thr Gly Lys Glu Leu Asp Lys Gly Val Gln Gly Leu 90
 80 85
 Asn His Gly Met Asp Lys Val Ala His Glu Ile Asn His Gly Ile 105
 95 100
 Gly Gln Ala Gly Lys Glu Ala Glu Lys Leu Gly His Gly Val Asn 120
 110 115
 Asn Ala Ala Gly Gln Ala Gly Lys Glu Ala Asp Lys Ala Val Gln 135
 125 130
 Gly Phe His Thr Gly Val His Gln Ala Gly Lys Glu Ala Glu Lys 150
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 Val Glu Lys Leu Gly Gln Gly Ala His His Ala Ala Gly Gln Ala 180
 170 175

<400> 252

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<211> 837

<212> PRT

<213> Homo sapiens

<400> 253

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| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Trp | Gly | Ala | Leu | Pro | Pro | Arg | Pro | Pro | Leu | Leu | Leu | Leu | Leu | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Leu | Leu | Leu | Leu | Gln | Pro | Pro | Pro | Pro | Thr | Trp | Ala | Leu | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Arg | Ile | Ser | Leu | Pro | Leu | Gly | Ser | Glu | Glu | Arg | Pro | Phe | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Arg | Phe | Glu | Ala | Glu | His | Ile | Ser | Asn | Tyr | Thr | Ala | Leu | Leu | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Arg | Asp | Gly | Arg | Thr | Leu | Tyr | Val | Gly | Ala | Arg | Glu | Ala | Leu |

| 80 | | | | | | | | | | 85 | | | | | 90 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Phe | Ala | Leu | Ser | Ser | Asn | Leu | Ser | Phe | Leu | Pro | Gly | Gly | Glu | Tyr | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Gln | Glu | Leu | Leu | Trp | Gly | Ala | Asp | Ala | Glu | Lys | Lys | Gln | Gln | Cys | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Ser | Phe | Lys | Gly | Lys | Asp | Pro | Gln | Arg | Asp | Cys | Gln | Asn | Tyr | Ile | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Lys | Ile | Leu | Leu | Pro | Leu | Ser | Gly | Ser | His | Leu | Phe | Thr | Cys | Gly | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Thr | Ala | Ala | Phe | Ser | Pro | Met | Cys | Thr | Tyr | Ile | Asn | Met | Glu | Asn | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Phe | Thr | Leu | Ala | Arg | Asp | Glu | Lys | Gly | Asn | Val | Leu | Leu | Glu | Asp | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Gly | Lys | Gly | Arg | Cys | Pro | Phe | Asp | Pro | Asn | Phe | Lys | Ser | Thr | Ala | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Leu | Val | Val | Asp | Gly | Glu | Leu | Tyr | Thr | Gly | Thr | Val | Ser | Ser | Phe | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Gln | Gly | Asn | Asp | Pro | Ala | Ile | Ser | Arg | Ser | Gln | Ser | Leu | Arg | Pro | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Thr | Lys | Thr | Glu | Ser | Ser | Leu | Asn | Trp | Leu | Gln | Asp | Pro | Ala | Phe | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Val | Ala | Ser | Ala | Tyr | Ile | Pro | Glu | Ser | Leu | Gly | Ser | Leu | Gln | Gly | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Asp | Asp | Asp | Lys | Ile | Tyr | Phe | Phe | Phe | Ser | Glu | Thr | Gly | Gln | Glu | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Phe | Glu | Phe | Phe | Glu | Asn | Thr | Ile | Val | Ser | Arg | Ile | Ala | Arg | Ile | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Cys | Lys | Gly | Asp | Glu | Gly | Gly | Glu | Arg | Val | Leu | Gln | Gln | Arg | Trp | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Thr | Ser | Phe | Leu | Lys | Ala | Gln | Leu | Leu | Cys | Ser | Arg | Pro | Asp | Asp | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Gly | Phe | Pro | Phe | Asn | Val | Leu | Gln | Asp | Val | Phe | Thr | Leu | Ser | Pro | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Ser | Pro | Gln | Asp | Trp | Arg | Asp | Thr | Leu | Phe | Tyr | Gly | Val | Phe | Thr | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Ser | Gln | Trp | His | Arg | Gly | Thr | Thr | Glu | Gly | Ser | Ala | Val | Cys | Val | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Phe | Thr | Met | Lys | Asp | Val | Gln | Arg | Val | Phe | Ser | Gly | Leu | Tyr | Lys | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |

Glu Val Asn Arg Glu Thr Gln Gln Trp Tyr Thr Val Thr His Pro
380 385 390

Val Pro Thr Pro Arg Pro Gly Ala Cys Ile Thr Asn Ser Ala Arg
395 400 405

Glu Arg Lys Ile Asn Ser Ser Leu Gln Leu Pro Asp Arg Val Leu
410 415 420

Asn Phe Leu Lys Asp His Phe Leu Met Asp Gly Gln Val Arg Ser
425 430 435

Arg Met Leu Leu Leu Gln Pro Gln Ala Arg Tyr Gln Arg Val Ala
440 445 450

Val His Arg Val Pro Gly Leu His His Thr Tyr Asp Val Leu Phe
455 460 465

Leu Gly Thr Gly Asp Gly Arg Leu His Lys Ala Val Ser Val Gly
470 475 480

Pro Arg Val His Ile Ile Glu Glu Leu Gln Ile Phe Ser Ser Gly
485 490 495

Gln Pro Val Gln Asn Leu Leu Leu Asp Thr His Arg Gly Leu Leu
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Tyr Ala Ala Ser His Ser Gly Val Val Gln Val Pro Met Ala Asn
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Cys Ser Leu Tyr Arg Ser Cys Gly Asp Cys Leu Leu Ala Arg Asp
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Pro Tyr Cys Ala Trp Ser Gly Ser Ser Cys Lys His Val Ser Leu
545 550 555

Tyr Gln Pro Gln Leu Ala Thr Arg Pro Trp Ile Gln Asp Ile Glu
560 565 570

Gly Ala Ser Ala Lys Asp Leu Cys Ser Ala Ser Ser Val Val Ser
575 580 585

Pro Ser Phe Val Pro Thr Gly Glu Lys Pro Cys Glu Gln Val Gln
590 595 600

Phe Gln Pro Asn Thr Val Asn Thr Leu Ala Cys Pro Leu Leu Ser
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Asn Leu Ala Thr Arg Leu Trp Leu Arg Asn Gly Ala Pro Val Asn
620 625 630

Ala Ser Ala Ser Cys His Val Leu Pro Thr Gly Asp Leu Leu Leu
635 640 645

Val Gly Thr Gln Gln Leu Gly Glu Phe Gln Cys Trp Ser Leu Glu
650 655 660

Glu Gly Phe Gln Gln Leu Val Ala Ser Tyr Cys Pro Glu Val Val

| | | |
|-------------------------------------|---------------------|-----|
| 665 | 670 | 675 |
| Glu Asp Gly Val Ala Asp Gln Thr Asp | Glu Gly Gly Ser Val | Pro |
| 680 | 685 | 690 |
| Val Ile Ile Ser Thr Ser Arg Val Ser | Ala Pro Ala Gly Gly | Lys |
| 695 | 700 | 705 |
| Ala Ser Trp Gly Ala Asp Arg Ser Tyr | Trp Lys Glu Phe Leu | Val |
| 710 | 715 | 720 |
| Met Cys Thr Leu Phe Val Leu Ala Val | Leu Leu Pro Val Leu | Phe |
| 725 | 730 | 735 |
| Leu Leu Tyr Arg His Arg Asn Ser Met | Lys Val Phe Leu Lys | Gln |
| 740 | 745 | 750 |
| Gly Glu Cys Ala Ser Val His Pro Lys | Thr Cys Pro Val Val | Leu |
| 755 | 760 | 765 |
| Pro Pro Glu Thr Arg Pro Leu Asn Gly | Leu Gly Pro Pro Ser | Thr |
| 770 | 775 | 780 |
| Pro Leu Asp His Arg Gly Tyr Gln Ser | Leu Ser Asp Ser Pro | Pro |
| 785 | 790 | 795 |
| Gly Ala Arg Val Phe Thr Glu Ser Glu | Lys Arg Pro Leu Ser | Ile |
| 800 | 805 | 810 |
| Gln Asp Ser Phe Val Glu Val Ser Pro | Val Cys Pro Arg Pro | Arg |
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| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Lys Cys Leu Arg | Glu Met Tyr Thr Thr | His Glu Asp Val Glu Val | 245 | 250 | 255 |
| Gly Arg Cys Val | Arg Arg Phe Ala Gly | Val Gln Cys Val Trp Ser | 260 | 265 | 270 |
| Tyr Glu Met Arg | Gln Leu Phe Tyr Glu | Asn Tyr Glu Gln Asn Lys | 275 | 280 | 285 |
| Lys Gly Tyr Ile | Arg Asp Leu His Asn | Ser Lys Ile His Gln Ala | 290 | 295 | 300 |
| Ile Thr Leu His | Pro Asn Lys Asn Pro | Pro Tyr Gln Tyr Arg Leu | 305 | 310 | 315 |
| His Ser Tyr Met | Leu Ser Arg Lys Ile | Ser Glu Leu Arg His Arg | 320 | 325 | 330 |
| Thr Ile Gln Leu | His Arg Glu Ile Val | Leu Met Ser Lys Tyr Ser | 335 | 340 | 345 |
| Asn Thr Glu Ile | His Lys Glu Asp Leu | Gln Leu Gly Ile Pro Pro | 350 | 355 | 360 |
| Ser Phe Met Arg | Phe Gln Pro Arg Gln | Arg Glu Glu Ile Leu Glu | 365 | 370 | 375 |
| Trp Glu Phe Leu | Thr Gly Lys Tyr Leu | Tyr Ser Ala Val Asp Gly | 380 | 385 | 390 |
| Gln Pro Pro Arg | Arg Gly Met Asp Ser | Ala Gln Arg Glu Ala Leu | 395 | 400 | 405 |
| Asp Asp Ile Val | Met Gln Val Met Glu | Met Ile Asn Ala Asn Ala | 410 | 415 | 420 |
| Lys Thr Arg Gly | Arg Ile Ile Asp Phe | Lys Glu Ile Gln Tyr Gly | 425 | 430 | 435 |
| Tyr Arg Arg Val | Asn Pro Met Tyr Gly | Ala Glu Tyr Ile Leu Asp | 440 | 445 | 450 |
| Leu Leu Leu Leu | Tyr Lys Lys His Lys | Gly Lys Lys Met Thr Val | 455 | 460 | 465 |
| Pro Val Arg Arg | His Ala Tyr Leu Gln | Gln Thr Phe Ser Lys Ile | 470 | 475 | 480 |
| Gln Phe Val Glu | His Glu Glu Leu Asp | Ala Gln Glu Leu Ala Lys | 485 | 490 | 495 |
| Arg Ile Asn Gln | Glu Ser Gly Ser Leu | Ser Phe Leu Ser Asn Ser | 500 | 505 | 510 |
| Leu Lys Lys Leu | Val Pro Phe Gln Leu | Pro Gly Ser Lys Ser Glu | 515 | 520 | 525 |
| His Lys Glu Pro | Lys Asp Lys Lys Ile | Asn Ile Leu Ile Pro Leu | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|--|
| 530 | | | | | | | | | 535 | | | | | 540 | |
| Ser | Gly | Arg | Phe | Asp 545 | Met | Phe | Val | Arg | Phe 550 | Met | Gly | Asn | Phe | Glu 555 | |
| Lys | Thr | Cys | Leu | Ile 560 | Pro | Asn | Gln | Asn | Val 565 | Lys | Leu | Val | Val | Leu 570 | |
| Leu | Phe | Asn | Ser | Asp 575 | Ser | Asn | Pro | Asp | Lys 580 | Ala | Lys | Gln | Val | Glu 585 | |
| Leu | Met | Arg | Asp | Tyr 590 | Arg | Ile | Lys | Tyr | Pro 595 | Lys | Ala | Asp | Met | Gln 600 | |
| Ile | Leu | Pro | Val | Ser 605 | Gly | Glu | Phe | Ser | Arg 610 | Ala | Leu | Ala | Leu | Glu 615 | |
| Val | Gly | Ser | Ser | Gln 620 | Phe | Asn | Asn | Glu | Ser 625 | Leu | Leu | Phe | Phe | Cys 630 | |
| Asp | Val | Asp | Leu | Val 635 | Phe | Thr | Thr | Glu | Phe 640 | Leu | Gln | Arg | Cys | Arg 645 | |
| Ala | Asn | Thr | Val | Leu 650 | Gly | Gln | Gln | Ile | Tyr 655 | Phe | Pro | Ile | Ile | Phe 660 | |
| Ser | Gln | Tyr | Asp | Pro 665 | Lys | Ile | Val | Tyr | Ser 670 | Gly | Lys | Val | Pro | Ser 675 | |
| Asp | Asn | His | Phe | Ala 680 | Phe | Thr | Gln | Lys | Thr 685 | Gly | Phe | Trp | Arg | Asn 690 | |
| Tyr | Gly | Phe | Gly | Ile 695 | Thr | Cys | Ile | Tyr | Lys 700 | Gly | Asp | Leu | Val | Arg 705 | |
| Val | Gly | Gly | Phe | Asp 710 | Val | Ser | Ile | Gln | Gly 715 | Trp | Gly | Leu | Glu | Asp 720 | |
| Val | Asp | Leu | Phe | Asn 725 | Lys | Val | Val | Gln | Ala 730 | Gly | Leu | Lys | Thr | Phe 735 | |
| Arg | Ser | Gln | Glu | Val 740 | Gly | Val | Val | His | Val 745 | His | His | Pro | Val | Phe 750 | |
| Cys | Asp | Pro | Asn | Leu 755 | Asp | Pro | Lys | Gln | Tyr 760 | Lys | Met | Cys | Leu | Gly 765 | |
| Ser | Lys | Ala | Ser | Thr 770 | Tyr | Gly | Ser | Thr | Gln 775 | Gln | Leu | Ala | Glu | Met 780 | |
| Trp | Leu | Glu | Lys | Asn 785 | Asp | Pro | Ser | Tyr | Ser 790 | Lys | Ser | Ser | Asn | Asn 795 | |
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 ataaaaatat tttctattgt agttcaaagtg tgccaacatc tttatgtgtc 1350
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 attttggttc aggaaaaaa 1419

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 <211> 350
 <212> PRT
 <213> Homo sapiens

<400> 265
 Met Lys Pro Leu Val Leu Leu Val Ala Leu Leu Leu Trp Pro Ser
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 Ser Val Pro Ala Tyr Pro Ser Ile Thr Val Thr Pro Asp Glu Glu
 20 25 30
 Gln Asn Leu Asn His Tyr Ile Gln Val Leu Glu Asn Leu Val Arg
 35 40 45
 Ser Val Pro Ser Gly Glu Pro Gly Arg Glu Lys Lys Ser Asn Ser

251

Leu Leu Lys Val Tyr
350

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<211> 2403
<212> DNA
<213> Homo sapiens

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cacaacctcc caggctctc atttgctagt cacggacagt gattcctgcc 1900
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tgagggcaca gtgtttgcta atgatgtgtt tttatattat acattttccc 2000
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gataccaaaa ccaggcaaag aaaacagaag aagaggaagg aaaactacag 2200
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caaattaaac taaacaatat atttaaagat gatataaac tactcagtgt 2300
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aaa 2403

<210> 267
<211> 466
<212> PRT
<213> Homo sapiens

<400> 267
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Ser Gly Gln Trp Gln Val Thr Gly Pro Gly Lys Phe Val Gln Ala

| 20 | | | | | | | | | | 25 | | | | | 30 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Leu | Val | Gly | Glu | Asp | Ala | Val | Phe | Ser | Cys | Ser | Leu | Phe | Pro | Glu | | | | | |
| | | | | 35 | | | | | 40 | | | | | 45 | | | | | |
| Thr | Ser | Ala | Glu | Ala | Met | Glu | Val | Arg | Phe | Phe | Arg | Asn | Gln | Phe | | | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | | | |
| His | Ala | Val | Val | His | Leu | Tyr | Arg | Asp | Gly | Glu | Asp | Trp | Glu | Ser | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Lys | Gln | Met | Pro | Gln | Tyr | Arg | Gly | Arg | Thr | Glu | Phe | Val | Lys | Asp | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Ser | Ile | Ala | Gly | Gly | Arg | Val | Ser | Leu | Arg | Leu | Lys | Asn | Ile | Thr | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Pro | Ser | Asp | Ile | Gly | Leu | Tyr | Gly | Cys | Trp | Phe | Ser | Ser | Gln | Ile | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Tyr | Asp | Glu | Glu | Ala | Thr | Trp | Glu | Leu | Arg | Val | Ala | Ala | Leu | Gly | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Ser | Leu | Pro | Leu | Ile | Ser | Ile | Val | Gly | Tyr | Val | Asp | Gly | Gly | Ile | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Gln | Leu | Leu | Cys | Leu | Ser | Ser | Gly | Trp | Phe | Pro | Gln | Pro | Thr | Ala | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Lys | Trp | Lys | Gly | Pro | Gln | Gly | Gln | Asp | Leu | Ser | Ser | Asp | Ser | Arg | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Ala | Asn | Ala | Asp | Gly | Tyr | Ser | Leu | Tyr | Asp | Val | Glu | Ile | Ser | Ile | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Ile | Val | Gln | Glu | Asn | Ala | Gly | Ser | Ile | Leu | Cys | Ser | Ile | His | Leu | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Ala | Glu | Gln | Ser | His | Glu | Val | Glu | Ser | Lys | Val | Leu | Ile | Gly | Glu | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Thr | Phe | Phe | Gln | Pro | Ser | Pro | Trp | Arg | Leu | Ala | Ser | Ile | Leu | Leu | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Gly | Leu | Leu | Cys | Gly | Ala | Leu | Cys | Gly | Val | Val | Met | Gly | Met | Ile | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Ile | Val | Phe | Phe | Lys | Ser | Lys | Gly | Lys | Ile | Gln | Ala | Glu | Leu | Asp | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Trp | Arg | Arg | Lys | His | Gly | Gln | Ala | Glu | Leu | Arg | Asp | Ala | Arg | Lys | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| His | Ala | Val | Glu | Val | Thr | Leu | Asp | Pro | Glu | Thr | Ala | His | Pro | Lys | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Leu | Cys | Val | Ser | Asp | Leu | Lys | Thr | Val | Thr | His | Arg | Lys | Ala | Pro | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |

Gln Glu Val Pro His Ser Glu Lys Arg Phe Thr Arg Lys Ser Val
 320 325 330
 Val Ala Ser Gln Gly Phe Gln Ala Gly Arg His Tyr Trp Glu Val
 335 340 345
 Asp Val Gly Gln Asn Val Gly Trp Tyr Val Gly Val Cys Arg Asp
 350 355 360
 Asp Val Asp Arg Gly Lys Asn Asn Val Thr Leu Ser Pro Asn Asn
 365 370 375
 Gly Tyr Trp Val Leu Arg Leu Thr Thr Glu His Leu Tyr Phe Thr
 380 385 390
 Phe Asn Pro His Phe Ile Ser Leu Pro Pro Ser Thr Pro Pro Thr
 395 400 405
 Arg Val Gly Val Phe Leu Asp Tyr Glu Gly Gly Thr Ile Ser Phe
 410 415 420
 Phe Asn Thr Asn Asp Gln Ser Leu Ile Tyr Thr Leu Leu Thr Cys
 425 430 435
 Gln Phe Glu Gly Leu Leu Arg Pro Tyr Ile Gln His Ala Met Tyr
 440 445 450
 Asp Glu Glu Lys Gly Thr Pro Ile Phe Ile Cys Pro Val Ser Trp
 455 460 465

Gly

<210> 268
 <211> 2103
 <212> DNA
 <213> Homo sapiens

<400> 268
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 gtcattcttca tatccctgat tgtcctggca gtgtgcattg gactcactgt 150
 tcattatgtg agatataatc aaaagaagac ctacaattac tatagcacat 200
 tgtcatttac aactgacaaa ctatatgctg agtttggcag agaggcttct 250
 aacaatttta cagaaatgag ccagagactt gaatcaatgg tgaaaaatgc 300
 attttataaaa tctccattaa gggaagaatt tgtcaagtct cagggttatca 350
 agttcagtca acagaagcat ggagtgttgg ctcatatgct gttgatttgt 400
 agatttcact ctactgagga tcctgaaact gtagataaaa ttgttcaact 450
 tgttttacat gaaaagctgc aagatgctgt aggaccccct aaagtagatc 500

| | | | | | |
|-------------|-------------|-------------|-------------|-------------|------|
| ctcactcagt | taaaattaaa | aaaatcaaca | agacagaaac | agacagctat | 550 |
| ctaaaccatt | gctgcggaac | acgaagaagt | aaaactctag | gtcagagtct | 600 |
| caggatcggt | ggtgggacag | aagtagaaga | gggtgaatgg | ccctggcagg | 650 |
| ctagcctgca | gtgggatggg | agtcactcgt | gtggagcaac | cttaattaat | 700 |
| gccacatggc | ttgtgagtgc | tgctcactgt | tttacaacat | ataagaaccc | 750 |
| tgccagatgg | actgcttcct | ttggagtaac | aataaaacct | tcgaaaatga | 800 |
| aacgggggtct | cgggagaata | attgtccatg | aaaaatacaa | acacccatca | 850 |
| catgactatg | atattttctct | tgacagagctt | tctagccctg | ttccctacac | 900 |
| aatgcaatg | catagagttt | gtctccctga | tgcatcctat | gagtttcaac | 950 |
| cagggtgatgt | gatgtttgtg | acaggatttg | gagcactgaa | aatgatgggt | 1000 |
| tacagtcaaa | atcatcttcg | acaagcacag | gtgactctca | tagacgctac | 1050 |
| aacttgcaat | gaacctcaag | cttacaatga | cgccataact | cctagaatgt | 1100 |
| tatgtgctgg | ctccttagaa | ggaaaaacag | atgcatgcc | gggtgactct | 1150 |
| ggaggaccac | tggttagttc | agatgctaga | gatatctggg | accttgctgg | 1200 |
| aatagtgagc | tggggagatg | aatgtgcaa | acccaacaag | cctgggtgtt | 1250 |
| atactagagt | tacggccttg | cgggactgga | ttacttcaaa | aactgggtatc | 1300 |
| taagagacaa | aagcctcatg | gaacagataa | catttttttt | tgtttttttg | 1350 |
| gtgtggaggc | cattttttaga | gatacagaat | tggagaagac | ttgcaaaaaca | 1400 |
| gctagatttg | actgatctca | ataaactgtt | tgcttgatgc | atgtattttc | 1450 |
| ttcccagctc | tgttccgcac | gtaagcatcc | tgcttctgcc | agatcaactc | 1500 |
| tgtcatctgt | gagcaatagt | tgaaacttta | tgtacataga | gaaatagata | 1550 |
| atacaatatt | acattacagc | ctgtattcat | ttgttctcta | gaagttttgt | 1600 |
| cagaattttg | acttgttgac | ataaatttgt | aatgcatata | tacaatttga | 1650 |
| agcactcctt | ttcttcagtt | cctcagctcc | tctcatttca | gcaaatatcc | 1700 |
| atthttcaagg | tgcagaacaa | ggagtgaag | aaaatataag | aagaaaaaaa | 1750 |
| tcccctacat | tttattggca | cagaaaagta | ttaggtgttt | ttcttagtgg | 1800 |
| aatattagaa | atgatcatat | tcattatgaa | aggccaagca | aagacagcag | 1850 |
| aataccaatc | acttcatcat | ttaggaagta | tgggaactaa | gttaaggaag | 1900 |
| tccagaaaaga | agccaagata | tatccttatt | ttcattttcca | aacaactact | 1950 |

atgataaatg tgaagaagat tctgtttttt tgtgacctat aataattata 2000
 caaacttcat gcaatgtact tgttctaagc aaattaaagc aaatatttat 2050
 ttaacattgt tactgaggat gtcaacatat aacaataaaa tataaatcac 2100
 cca 2103

<210> 269
 <211> 423
 <212> PRT
 <213> Homo sapiens

<400> 269
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 Val Leu Ala Val Cys Ile Gly Leu Thr Val His Tyr Val Arg Tyr
 35 40 45
 Asn Gln Lys Lys Thr Tyr Asn Tyr Tyr Ser Thr Leu Ser Phe Thr
 50 55 60
 Thr Asp Lys Leu Tyr Ala Glu Phe Gly Arg Glu Ala Ser Asn Asn
 65 70 75
 Phe Thr Glu Met Ser Gln Arg Leu Glu Ser Met Val Lys Asn Ala
 80 85 90
 Phe Tyr Lys Ser Pro Leu Arg Glu Glu Phe Val Lys Ser Gln Val
 95 100 105
 Ile Lys Phe Ser Gln Gln Lys His Gly Val Leu Ala His Met Leu
 110 115 120
 Leu Ile Cys Arg Phe His Ser Thr Glu Asp Pro Glu Thr Val Asp
 125 130 135
 Lys Ile Val Gln Leu Val Leu His Glu Lys Leu Gln Asp Ala Val
 140 145 150
 Gly Pro Pro Lys Val Asp Pro His Ser Val Lys Ile Lys Lys Ile
 155 160 165
 Asn Lys Thr Glu Thr Asp Ser Tyr Leu Asn His Cys Cys Gly Thr
 170 175 180
 Arg Arg Ser Lys Thr Leu Gly Gln Ser Leu Arg Ile Val Gly Gly
 185 190 195
 Thr Glu Val Glu Glu Gly Glu Trp Pro Trp Gln Ala Ser Leu Gln
 200 205 210
 Trp Asp Gly Ser His Arg Cys Gly Ala Thr Leu Ile Asn Ala Thr
 215 220 225

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Leu | Val | Ser | Ala | Ala | His | Cys | Phe | Thr | Thr | Tyr | Lys | Asn | Pro |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Arg | Trp | Thr | Ala | Ser | Phe | Gly | Val | Thr | Ile | Lys | Pro | Ser | Lys |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Met | Lys | Arg | Gly | Leu | Arg | Arg | Ile | Ile | Val | His | Glu | Lys | Tyr | Lys |
| | | | | 260 | | | | | 265 | | | | | 270 |
| His | Pro | Ser | His | Asp | Tyr | Asp | Ile | Ser | Leu | Ala | Glu | Leu | Ser | Ser |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Pro | Val | Pro | Tyr | Thr | Asn | Ala | Val | His | Arg | Val | Cys | Leu | Pro | Asp |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Ala | Ser | Tyr | Glu | Phe | Gln | Pro | Gly | Asp | Val | Met | Phe | Val | Thr | Gly |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Phe | Gly | Ala | Leu | Lys | Asn | Asp | Gly | Tyr | Ser | Gln | Asn | His | Leu | Arg |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Gln | Ala | Gln | Val | Thr | Leu | Ile | Asp | Ala | Thr | Thr | Cys | Asn | Glu | Pro |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Gln | Ala | Tyr | Asn | Asp | Ala | Ile | Thr | Pro | Arg | Met | Leu | Cys | Ala | Gly |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Ser | Leu | Glu | Gly | Lys | Thr | Asp | Ala | Cys | Gln | Gly | Asp | Ser | Gly | Gly |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Pro | Leu | Val | Ser | Ser | Asp | Ala | Arg | Asp | Ile | Trp | Tyr | Leu | Ala | Gly |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Ile | Val | Ser | Trp | Gly | Asp | Glu | Cys | Ala | Lys | Pro | Asn | Lys | Pro | Gly |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Val | Tyr | Thr | Arg | Val | Thr | Ala | Leu | Arg | Asp | Trp | Ile | Thr | Ser | Lys |
| | | | | 410 | | | | | 415 | | | | | 420 |

Thr Gly Ile

<210> 270
 <211> 1170
 <212> DNA
 <213> Homo sapiens

<400> 270
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 cagacgtcag ctggttgatt cccgctgcat caaggcctac ccactgtctc 150
 catgctgggc tctccctgcc ttctgtggct cctggccgtg accttcttgg 200
 ttccagagc tcagcccttg gccctcaag actttgaaga agaggaggca 250

gatgagactg agacggcgtg gccgcctttg ccggctgtcc cctgcgacta 300
cgaccactgc cgacacctgc aggtgccctg caaggagcta cagagggtcg 350
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gacccgcccgc gcatgggaga agtgcgcatc gcggccgaag agggccgcgc 450
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tgctttggga cggcagcgag gctgcgcaga aggggcccc gctgaacgct 550
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gccgcagggg cgctctgaaa ggggcctggg ggcatctcgg gcacagacag 900
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<210> 271
<211> 238
<212> PRT
<213> Homo sapiens

<400> 271
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20 25 30
Glu Glu Ala Asp Glu Thr Glu Thr Ala Trp Pro Pro Leu Pro Ala
35 40 45
Val Pro Cys Asp Tyr Asp His Cys Arg His Leu Gln Val Pro Cys
50 55 60
Lys Glu Leu Gln Arg Val Gly Pro Ala Ala Cys Leu Cys Pro Gly
65 70 75

Leu Ser Ser Pro Ala Gln Pro Pro Asp Pro Pro Arg Met Gly Glu
80 85 90

Val Arg Ile Ala Ala Glu Glu Gly Arg Ala Val Val His Trp Cys
95 100 105

Ala Pro Phe Ser Pro Val Leu His Tyr Trp Leu Leu Leu Trp Asp
110 115 120

Gly Ser Glu Ala Ala Gln Lys Gly Pro Pro Leu Asn Ala Thr Val
125 130 135

Arg Arg Ala Glu Leu Lys Gly Leu Lys Pro Gly Gly Ile Tyr Val
140 145 150

Val Cys Val Val Ala Ala Asn Glu Ala Gly Ala Ser Arg Val Pro
155 160 165

Gln Ala Gly Gly Glu Gly Leu Glu Gly Ala Asp Ile Pro Ala Phe
170 175 180

Gly Pro Cys Ser Arg Leu Ala Val Pro Pro Asn Pro Arg Thr Leu
185 190 195

Val His Ala Ala Val Gly Val Gly Thr Ala Leu Ala Leu Leu Ser
200 205 210

Cys Ala Ala Leu Val Trp His Phe Cys Leu Arg Asp Arg Trp Gly
215 220 225

Cys Pro Arg Arg Ala Ala Ala Arg Ala Ala Gly Ala Leu
230 235

<210> 272
<211> 2397
<212> DNA
<213> Homo sapiens

<400> 272
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tgcccttggg agtaggatgt ggtgaaagga tggggcttct cccttacggg 200
gctcacaatg gccagagaag attccgtgaa gtgtctgcgc tgctgtctct 250
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tctgcttgga tgagggacta cctaaataat gttctcactt taactgcaga 350
aacgaggggta gaggaagcag tcattttgac ttactttcct gtggttcac 400
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aagtttgctt gtcattttct gtgtagaact ggcttgtggc gtttggacat 550
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tgtgttagag aattcccagg atgttccaaa caggcccacc aggaagatct 800
cagtgcactt tatcaagagg gttgtgggaa gaaaatgtat tcctttttga 850
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atgacaactc tcagcacctg tcatgtccct cagtagaact gttgaaacca 1050
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caaacttggt ttattggact tgtgaatttt tgagtacata ctatgtgttt 1200
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 <212> PRT
 <213> Homo sapiens

<400> 273
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 Val Ser Ala Trp Met Arg Asp Tyr Leu Asn Asn Val Leu Thr Leu
 35 40 45
 Thr Ala Glu Thr Arg Val Glu Glu Ala Val Ile Leu Thr Tyr Phe
 50 55 60
 Pro Val Val His Pro Val Met Ile Ala Val Cys Cys Phe Leu Ile
 65 70 75
 Ile Val Gly Met Leu Gly Tyr Cys Gly Thr Val Lys Arg Asn Leu
 80 85 90
 Leu Leu Leu Ala Trp Tyr Phe Gly Ser Leu Leu Val Ile Phe Cys
 95 100 105
 Val Glu Leu Ala Cys Gly Val Trp Thr Tyr Glu Gln Glu Leu Met
 110 115 120
 Val Pro Val Gln Trp Ser Asp Met Val Thr Leu Lys Ala Arg Met
 125 130 135
 Thr Asn Tyr Gly Leu Pro Arg Tyr Arg Trp Leu Thr His Ala Trp
 140 145 150
 Asn Phe Phe Gln Arg Glu Phe Lys Cys Cys Gly Val Val Tyr Phe
 155 160 165
 Thr Asp Trp Leu Glu Met Thr Glu Met Asp Trp Pro Pro Asp Ser

| | | |
|---|-----|-----|
| 170 | 175 | 180 |
| Cys Cys Val Arg Glu Phe Pro Gly Cys Ser Lys Gln Ala His Gln | | |
| 185 | 190 | 195 |
| Glu Asp Leu Ser Asp Leu Tyr Gln Glu Gly Cys Gly Lys Lys Met | | |
| 200 | 205 | 210 |
| Tyr Ser Phe Leu Arg Gly Thr Lys Gln Leu Gln Val Leu Arg Phe | | |
| 215 | 220 | 225 |
| Leu Gly Ile Ser Ile Gly Val Thr Gln Ile Leu Ala Met Ile Leu | | |
| 230 | 235 | 240 |
| Thr Ile Thr Leu Leu Trp Ala Leu Tyr Tyr Asp Arg Arg Glu Pro | | |
| 245 | 250 | 255 |
| Gly Thr Asp Gln Met Met Ser Leu Lys Asn Asp Asn Ser Gln His | | |
| 260 | 265 | 270 |
| Leu Ser Cys Pro Ser Val Glu Leu Leu Lys Pro Ser Leu Ser Arg | | |
| 275 | 280 | 285 |
| Ile Phe Glu His Thr Ser Met Ala Asn Ser Phe Asn Thr His Phe | | |
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| Glu Met Glu Glu Leu | | |
| 305 | | |

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 <212> DNA
 <213> Homo sapiens

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tactgtggg ctggagagga gaaggaaagg gtctgcgcca gccctgtccg 1900
tcttcacca tccccagcc tactagagca agaaaccagt tgtaatatata 1950
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<210> 275

<211> 432

<212> PRT

<213> Homo sapiens

<400> 275

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Leu | Gln | Asp | Pro | Asp | Ser | Asp | Gln | Pro | Leu | Asn | Ser | Leu | Asp | 1 | 5 | 10 | 15 |
| Val | Lys | Pro | Leu | Arg | Lys | Pro | Arg | Ile | Pro | Met | Glu | Thr | Phe | Arg | 20 | 25 | 30 | |
| Lys | Val | Gly | Ile | Pro | Ile | Ile | Ile | Ala | Leu | Leu | Ser | Leu | Ala | Ser | 35 | 40 | 45 | |
| Ile | Ile | Ile | Val | Val | Val | Leu | Ile | Lys | Val | Ile | Leu | Asp | Lys | Tyr | 50 | 55 | 60 | |
| Tyr | Phe | Leu | Cys | Gly | Gln | Pro | Leu | His | Phe | Ile | Pro | Arg | Lys | Gln | 65 | 70 | 75 | |
| Leu | Cys | Asp | Gly | Glu | Leu | Asp | Cys | Pro | Leu | Gly | Glu | Asp | Glu | Glu | 80 | 85 | 90 | |
| His | Cys | Val | Lys | Ser | Phe | Pro | Glu | Gly | Pro | Ala | Val | Ala | Val | Arg | 95 | 100 | 105 | |
| Leu | Ser | Lys | Asp | Arg | Ser | Thr | Leu | Gln | Val | Leu | Asp | Ser | Ala | Thr | 110 | 115 | 120 | |
| Gly | Asn | Trp | Phe | Ser | Ala | Cys | Phe | Asp | Asn | Phe | Thr | Glu | Ala | Leu | 125 | 130 | 135 | |
| Ala | Glu | Thr | Ala | Cys | Arg | Gln | Met | Gly | Tyr | Ser | Arg | Ala | Val | Glu | 140 | 145 | 150 | |
| Ile | Gly | Pro | Asp | Gln | Asp | Leu | Asp | Val | Val | Glu | Ile | Thr | Glu | Asn | 155 | 160 | 165 | |
| Ser | Gln | Glu | Leu | Arg | Met | Arg | Asn | Ser | Ser | Gly | Pro | Cys | Leu | Ser | 170 | 175 | 180 | |
| Gly | Ser | Leu | Val | Ser | Leu | His | Cys | Leu | Ala | Cys | Gly | Lys | Ser | Leu | 185 | 190 | 195 | |
| Lys | Thr | Pro | Arg | Val | Val | Gly | Gly | Glu | Glu | Ala | Ser | Val | Asp | Ser | 200 | 205 | 210 | |
| Trp | Pro | Trp | Gln | Val | Ser | Ile | Gln | Tyr | Asp | Lys | Gln | His | Val | Cys | 215 | 220 | 225 | |
| Gly | Gly | Ser | Ile | Leu | Asp | Pro | His | Trp | Val | Leu | Thr | Ala | Ala | His | 230 | 235 | 240 | |
| Cys | Phe | Arg | Lys | His | Thr | Asp | Val | Phe | Asn | Trp | Lys | Val | Arg | Ala | 245 | 250 | 255 | |

Gly Ser Asp Lys Leu Gly Ser Phe Pro Ser Leu Ala Val Ala Lys
 260 265 270
 Ile Ile Ile Ile Glu Phe Asn Pro Met Tyr Pro Lys Asp Asn Asp
 275 280 285
 Ile Ala Leu Met Lys Leu Gln Phe Pro Leu Thr Phe Ser Gly Thr
 290 295 300
 Val Arg Pro Ile Cys Leu Pro Phe Phe Asp Glu Glu Leu Thr Pro
 305 310 315
 Ala Thr Pro Leu Trp Ile Ile Gly Trp Gly Phe Thr Lys Gln Asn
 320 325 330
 Gly Gly Lys Met Ser Asp Ile Leu Leu Gln Ala Ser Val Gln Val
 335 340 345
 Ile Asp Ser Thr Arg Cys Asn Ala Asp Asp Ala Tyr Gln Gly Glu
 350 355 360
 Val Thr Glu Lys Met Met Cys Ala Gly Ile Pro Glu Gly Gly Val
 365 370 375
 Asp Thr Cys Gln Gly Asp Ser Gly Gly Pro Leu Met Tyr Gln Ser
 380 385 390
 Asp Gln Trp His Val Val Gly Ile Val Ser Trp Gly Tyr Gly Cys
 395 400 405
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 410 415 420
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 <212> DNA
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 gccattctgg ccttgatata ccaggatcca ggggtcccca ggctaaagaa 400

| | | | | | |
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| agaagaagag | caatgagaca | cagtgtttca | acttcatccg | tgtcctgggt | 500 |
| tcttacaatg | tcacccatct | ctacacctgc | ggcaccttcg | ccttcagccc | 550 |
| tgcttgtacc | ttcattgaac | ttcaagattc | ctacctgttg | cccatctcgg | 600 |
| aggacaaggt | catggaggga | aaaggccaaa | gcccctttga | ccccgctcac | 650 |
| aagcatacgg | ctgtcttggg | ggatgggatg | ctctattctg | gtactatgaa | 700 |
| caacttcctg | ggcagtgagc | ccatcctgat | gcgcacactg | ggatcccagc | 750 |
| ctgtcctcaa | gaccgacaac | ttcctccgct | ggctgcatca | tgacgcctcc | 800 |
| tttgtggcag | ccatcccttc | gacccaggtc | gtctacttct | tcttcgagga | 850 |
| gacagccagc | gagtttgact | tctttgagag | gctccacaca | tcgcgggtgg | 900 |
| ctagagtctg | caagaatgac | gtgggcggcg | aaaagctgct | gcagaagaag | 950 |
| tggaccacct | tcctgaaggc | ccagctgctc | tgcaccacgc | cggggcagct | 1000 |
| gcccttcaac | gtcatccgcc | acgcggtcct | gctccccgcc | gattctccca | 1050 |
| cagctcccca | catctacgca | gtcttcacct | cccagtgcca | ggttggcggg | 1100 |
| accaggagct | ctgcggtttg | tgccttctct | ctcttgga | ttgaacgtgt | 1150 |
| ctttaagggg | aaatacaaag | agttgaacaa | agaaacttca | cgctggacta | 1200 |
| cttatagggg | ccctgagacc | aacccccggc | caggcagttg | ctcagtgggc | 1250 |
| ccctcctctg | ataaggccct | gaccttcatg | aaggaccatt | tcctgatgga | 1300 |
| tgagcaagtg | gtggggacgc | ccctgctggt | gaaatctggc | gtggagtata | 1350 |
| cacggcttgc | agtggagaca | gcccagggcc | ttgatgggca | cagccatctt | 1400 |
| gtcatgtacc | tgggaaccac | cacagggtcg | ctccacaagg | ctgtggtaag | 1450 |
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| ctgaacctgt | tcgcaacctg | cagctggccc | ccaccacagg | tgcagtgttt | 1550 |
| gtaggcttct | caggaggtgt | ctggagggtg | ccccgagcca | actgtagtgt | 1600 |
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| tggcccatg | agcaggagcc | ttcggcctca | gagccgcccc | caaatacatta | 1800 |
| aagaagtcct | ggctgtcccc | aactccatcc | tggagctccc | ctgccccccac | 1850 |

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 <211> 761
 <212> PRT
 <213> Homo sapiens
 <400> 277

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 Ala Gly Gly Gly Gly Gln Gly Pro Met Pro Arg Val Arg Tyr Tyr
 35 40 45
 Ala Gly Asp Glu Arg Arg Ala Leu Ser Phe Phe His Gln Lys Gly
 50 55 60
 Leu Gln Asp Phe Asp Thr Leu Leu Leu Ser Gly Asp Gly Asn Thr
 65 70 75
 Leu Tyr Val Gly Ala Arg Glu Ala Ile Leu Ala Leu Asp Ile Gln
 80 85 90
 Asp Pro Gly Val Pro Arg Leu Lys Asn Met Ile Pro Trp Pro Ala
 95 100 105
 Ser Asp Arg Lys Lys Ser Glu Cys Ala Phe Lys Lys Lys Ser Asn
 110 115 120
 Glu Thr Gln Cys Phe Asn Phe Ile Arg Val Leu Val Ser Tyr Asn
 125 130 135
 Val Thr His Leu Tyr Thr Cys Gly Thr Phe Ala Phe Ser Pro Ala
 140 145 150
 Cys Thr Phe Ile Glu Leu Gln Asp Ser Tyr Leu Leu Pro Ile Ser
 155 160 165
 Glu Asp Lys Val Met Glu Gly Lys Gly Gln Ser Pro Phe Asp Pro
 170 175 180
 Ala His Lys His Thr Ala Val Leu Val Asp Gly Met Leu Tyr Ser
 185 190 195
 Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile Leu Met Arg
 200 205 210
 Thr Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe Leu Arg
 215 220 225
 Trp Leu His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser Thr
 230 235 240
 Gln Val Val Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp
 245 250 255
 Phe Phe Glu Arg Leu His Thr Ser Arg Val Ala Arg Val Cys Lys
 260 265 270
 Asn Asp Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr
 275 280 285
 Phe Leu Lys Ala Gln Leu Leu Cys Thr Gln Pro Gly Gln Leu Pro

| 290 | | | | | | | | | | 295 | | | | | | | | | | 300 | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|--|-----|--|--|--|--|--|--|--|--|--|
| Phe | Asn | Val | Ile | Arg | His | Ala | Val | Leu | Leu | Pro | Ala | Asp | Ser | Pro | | | | | | | | | | | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | | | | | | | | | | | |
| Thr | Ala | Pro | His | Ile | Tyr | Ala | Val | Phe | Thr | Ser | Gln | Trp | Gln | Val | | | | | | | | | | | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | | | | | | | | | | | |
| Gly | Gly | Thr | Arg | Ser | Ser | Ala | Val | Cys | Ala | Phe | Ser | Leu | Leu | Asp | | | | | | | | | | | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | | | | | | | | | | | |
| Ile | Glu | Arg | Val | Phe | Lys | Gly | Lys | Tyr | Lys | Glu | Leu | Asn | Lys | Glu | | | | | | | | | | | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | | | | | | | | | | | |
| Thr | Ser | Arg | Trp | Thr | Thr | Tyr | Arg | Gly | Pro | Glu | Thr | Asn | Pro | Arg | | | | | | | | | | | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | | | | | | | | | | | |
| Pro | Gly | Ser | Cys | Ser | Val | Gly | Pro | Ser | Ser | Asp | Lys | Ala | Leu | Thr | | | | | | | | | | | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | | | | | | | | | | | |
| Phe | Met | Lys | Asp | His | Phe | Leu | Met | Asp | Glu | Gln | Val | Val | Gly | Thr | | | | | | | | | | | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | | | | | | | | | | | |
| Pro | Leu | Leu | Val | Lys | Ser | Gly | Val | Glu | Tyr | Thr | Arg | Leu | Ala | Val | | | | | | | | | | | | | | | |
| | | | | 410 | | | | | 415 | | | | | 420 | | | | | | | | | | | | | | | |
| Glu | Thr | Ala | Gln | Gly | Leu | Asp | Gly | His | Ser | His | Leu | Val | Met | Tyr | | | | | | | | | | | | | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | | | | | | | | | | | | | |
| Leu | Gly | Thr | Thr | Thr | Gly | Ser | Leu | His | Lys | Ala | Val | Val | Ser | Gly | | | | | | | | | | | | | | | |
| | | | | 440 | | | | | 445 | | | | | 450 | | | | | | | | | | | | | | | |
| Asp | Ser | Ser | Ala | His | Leu | Val | Glu | Glu | Ile | Gln | Leu | Phe | Pro | Asp | | | | | | | | | | | | | | | |
| | | | | 455 | | | | | 460 | | | | | 465 | | | | | | | | | | | | | | | |
| Pro | Glu | Pro | Val | Arg | Asn | Leu | Gln | Leu | Ala | Pro | Thr | Gln | Gly | Ala | | | | | | | | | | | | | | | |
| | | | | 470 | | | | | 475 | | | | | 480 | | | | | | | | | | | | | | | |
| Val | Phe | Val | Gly | Phe | Ser | Gly | Gly | Val | Trp | Arg | Val | Pro | Arg | Ala | | | | | | | | | | | | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | | | | | | | | | | | |
| Asn | Cys | Ser | Val | Tyr | Glu | Ser | Cys | Val | Asp | Cys | Val | Leu | Ala | Arg | | | | | | | | | | | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | | | | | | | | | | | |
| Asp | Pro | His | Cys | Ala | Trp | Asp | Pro | Glu | Ser | Arg | Thr | Cys | Cys | Leu | | | | | | | | | | | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | | | | | | | | | | | |
| Leu | Ser | Ala | Pro | Asn | Leu | Asn | Ser | Trp | Lys | Gln | Asp | Met | Glu | Arg | | | | | | | | | | | | | | | |
| | | | | 530 | | | | | 535 | | | | | 540 | | | | | | | | | | | | | | | |
| Gly | Asn | Pro | Glu | Trp | Ala | Cys | Ala | Ser | Gly | Pro | Met | Ser | Arg | Ser | | | | | | | | | | | | | | | |
| | | | | 545 | | | | | 550 | | | | | 555 | | | | | | | | | | | | | | | |
| Leu | Arg | Pro | Gln | Ser | Arg | Pro | Gln | Ile | Ile | Lys | Glu | Val | Leu | Ala | | | | | | | | | | | | | | | |
| | | | | 560 | | | | | 565 | | | | | 570 | | | | | | | | | | | | | | | |
| Val | Pro | Asn | Ser | Ile | Leu | Glu | Leu | Pro | Cys | Pro | His | Leu | Ser | Ala | | | | | | | | | | | | | | | |
| | | | | 575 | | | | | 580 | | | | | 585 | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Ser | Tyr | Tyr | Trp | Ser | His | Gly | Pro | Ala | Ala | Val | Pro | Glu | 590 | 595 | 600 |
| Ala | Ser | Ser | Thr | Val | Tyr | Asn | Gly | Ser | Leu | Leu | Leu | Ile | Val | Gln | 605 | 610 | 615 |
| Asp | Gly | Val | Gly | Gly | Leu | Tyr | Gln | Cys | Trp | Ala | Thr | Glu | Asn | Gly | 620 | 625 | 630 |
| Phe | Ser | Tyr | Pro | Val | Ile | Ser | Tyr | Trp | Val | Asp | Ser | Gln | Asp | Gln | 635 | 640 | 645 |
| Thr | Leu | Ala | Leu | Asp | Pro | Glu | Leu | Ala | Gly | Ile | Pro | Arg | Glu | His | 650 | 655 | 660 |
| Val | Lys | Val | Pro | Leu | Thr | Arg | Val | Ser | Gly | Gly | Ala | Ala | Leu | Ala | 665 | 670 | 675 |
| Ala | Gln | Gln | Ser | Tyr | Trp | Pro | His | Phe | Val | Thr | Val | Thr | Val | Leu | 680 | 685 | 690 |
| Phe | Ala | Leu | Val | Leu | Ser | Gly | Ala | Leu | Ile | Ile | Leu | Val | Ala | Ser | 695 | 700 | 705 |
| Pro | Leu | Arg | Ala | Leu | Arg | Ala | Arg | Gly | Lys | Val | Gln | Gly | Cys | Glu | 710 | 715 | 720 |
| Thr | Leu | Arg | Pro | Gly | Glu | Lys | Ala | Pro | Leu | Ser | Arg | Glu | Gln | His | 725 | 730 | 735 |
| Leu | Gln | Ser | Pro | Lys | Glu | Cys | Arg | Thr | Ser | Ala | Ser | Asp | Val | Asp | 740 | 745 | 750 |
| Ala | Asp | Asn | Asn | Cys | Leu | Gly | Thr | Glu | Val | Ala | | | | | 755 | 760 | |

<210> 278
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 278
 ctgctggtga aatctggcgt ggag 24

<210> 279
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 279
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<210> 280
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 280
catcttgta tgtacctggg aaccaccaca gggtogetcc acaag 45

<210> 281
<211> 2320
<212> DNA
<213> Homo sapiens

<400> 281
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atctacagta ggtggaagcc attatctact gatggaccgg gtttctcaga 200
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 tctctcccca acctcactaa 2320

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 260 | | | | | 265 | | | | | 270 |
| Leu | Met | Glu | Lys | Pro 275 | Ile | Lys | Pro | Val | Pro 280 | Gln | Asp | Leu | Glu | Asn 285 |
| Phe | Ile | Ala | Lys | Phe 290 | Gly | Asp | Ser | Gly | Phe 295 | Val | Leu | Val | Thr | Leu 300 |
| Gly | Ser | Met | Val | Asn 305 | Thr | Cys | Gln | Asn | Pro 310 | Glu | Ile | Phe | Lys | Glu 315 |
| Met | Asn | Asn | Ala | Phe 320 | Ala | His | Leu | Pro | Gln 325 | Gly | Val | Ile | Trp | Lys 330 |
| Cys | Gln | Cys | Ser | His 335 | Trp | Pro | Lys | Asp | Val 340 | His | Leu | Ala | Ala | Asn 345 |
| Val | Lys | Ile | Val | Asp 350 | Trp | Leu | Pro | Gln | Ser 355 | Asp | Leu | Leu | Ala | His 360 |
| Pro | Ser | Ile | Arg | Leu 365 | Phe | Val | Thr | His | Gly 370 | Gly | Gln | Asn | Ser | Ile 375 |
| Met | Glu | Ala | Ile | Gln 380 | His | Gly | Val | Pro | Met 385 | Val | Gly | Ile | Pro | Leu 390 |
| Phe | Gly | Asp | Gln | Pro 395 | Glu | Asn | Met | Val | Arg 400 | Val | Glu | Ala | Lys | Lys 405 |
| Phe | Gly | Val | Ser | Ile 410 | Gln | Leu | Lys | Lys | Leu 415 | Lys | Ala | Glu | Thr | Leu 420 |
| Ala | Leu | Lys | Met | Lys 425 | Gln | Ile | Met | Glu | Asp 430 | Lys | Arg | Tyr | Lys | Ser 435 |
| Ala | Ala | Val | Ala | Ala 440 | Ser | Val | Ile | Leu | Arg 445 | Ser | His | Pro | Leu | Ser 450 |
| Pro | Thr | Gln | Arg | Leu 455 | Val | Gly | Trp | Ile | Asp 460 | His | Val | Leu | Gln | Thr 465 |
| Gly | Gly | Ala | Thr | His 470 | Leu | Lys | Pro | Tyr | Val 475 | Phe | Gln | Gln | Pro | Trp 480 |
| His | Glu | Gln | Tyr | Leu 485 | Phe | Asp | Val | Phe | Val 490 | Phe | Leu | Leu | Gly | Leu 495 |
| Thr | Leu | Gly | Thr | Leu 500 | Trp | Leu | Cys | Gly | Lys 505 | Leu | Leu | Gly | Met | Ala 510 |
| Val | Trp | Trp | Leu | Arg 515 | Gly | Ala | Arg | Lys | Val 520 | Lys | Glu | Thr | | |

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<211> 24
<212> DNA
<213> Artificial
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<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 283
 tgcctttgct cacctacccc aagg 24

<210> 284
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 284
 tcaggctggt ctccaaagag aggg 24

<210> 285
 <211> 45
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-45
 <223> Synthetic construct.

<400> 285
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<210> 286
 <211> 2340
 <212> DNA
 <213> Homo sapiens

<400> 286
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 gtgctgtccc atccagcagg gctaccctga agctctggct gcagccctcc 200
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 tgctgtcact gcatgctctg ccaaggagga gggaactgca gtgacagcag 300
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 tgagtgtgtt tgctctggct gagagcagag ctgagagcag gtatacagag 1850
 ctggaagtgg accatggaaa acatcgataa ccatgcatcc tcttgcttgg 1900

| | | | | | |
|------------|------------|------------|------------|-------------|------|
| ccacctcctg | aaactgctcc | acctttgaag | tttgaacttt | agtcacctcca | 1950 |
| cactctgact | gctgcctcct | tcctcccagc | tctctcactg | agttatcttc | 2000 |
| actgtacctg | ttccagcata | tccccactat | ctctctttct | cctgatctgt | 2050 |
| gctgtcttat | tctcctcctt | aggcttccta | ttacctggga | ttccatgatt | 2100 |
| cattccttca | gacctctctc | tgccagtatg | ctaaaccttc | cctctctctt | 2150 |
| tcttatcccg | ctgtcccatt | ggcccagcct | ggatgaatct | atcaataaaa | 2200 |
| caactagaga | atgggtggta | gtgagacact | atagaattac | taaggagaag | 2250 |
| atgcctctgg | agtttggtac | gggtgttaca | ggtacaagta | ggtatgttgc | 2300 |
| agaggaaaat | aaatatcaaa | ctgtatacta | aaattaaaaa | | 2340 |

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<210> 287
<211> 205
<212> PRT
<213> Homo sapiens
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|-----------|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|--|
| <400> 287 | | | | | | | | | | | | | | | |
| Met 1 | Leu | Gly | Ala | Lys 5 | Pro | His | Trp | Leu | Pro 10 | Gly | Pro | Leu | His | Ser 15 | |
| Pro | Gly | Leu | Pro | Leu 20 | Val | Leu | Val | Leu | Leu 25 | Ala | Leu | Gly | Ala | Gly 30 | |
| Trp | Ala | Gln | Glu | Gly 35 | Ser | Glu | Pro | Val | Leu 40 | Leu | Glu | Gly | Glu | Cys 45 | |
| Leu | Val | Val | Cys | Glu 50 | Pro | Gly | Arg | Ala | Ala 55 | Ala | Gly | Gly | Pro | Gly 60 | |
| Gly | Ala | Ala | Leu | Gly 65 | Glu | Ala | Pro | Pro | Gly 70 | Arg | Val | Ala | Phe | Ala 75 | |
| Ala | Val | Arg | Ser | His 80 | His | His | Glu | Pro | Ala 85 | Gly | Glu | Thr | Gly | Asn 90 | |
| Gly | Thr | Ser | Gly | Ala 95 | Ile | Tyr | Phe | Asp | Gln 100 | Val | Leu | Val | Asn | Glu 105 | |
| Gly | Gly | Gly | Phe | Asp 110 | Arg | Ala | Ser | Gly | Ser 115 | Phe | Val | Ala | Pro | Val 120 | |
| Arg | Gly | Val | Tyr | Ser 125 | Phe | Arg | Phe | His | Val 130 | Val | Lys | Val | Tyr | Asn 135 | |
| Arg | Gln | Thr | Val | Gln 140 | Val | Ser | Leu | Met | Leu 145 | Asn | Thr | Trp | Pro | Val 150 | |
| Ile | Ser | Ala | Phe | Ala 155 | Asn | Asp | Pro | Asp | Val 160 | Thr | Arg | Glu | Ala | Ala 165 | |
| Thr | Ser | Ser | Val | Leu | Leu | Pro | Leu | Asp | Pro | Gly | Asp | Arg | Val | Ser | |

170 175 180
 Leu Arg Leu Arg Arg Gly Asn Leu Leu Gly Gly Trp Lys Tyr Ser
 185 190 195
 Ser Phe Ser Gly Phe Leu Ile Phe Pro Leu
 200 205
 <210> 288
 <211> 24
 <212> DNA
 <213> Artificial
 <220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.
 <400> 288
 aggagccac cagctctgtg ctac 24
 <210> 289
 <211> 27
 <212> DNA
 <213> Artificial
 <220>
 <221> Artificial Sequence
 <222> 1-27
 <223> Synthetic construct.
 <400> 289
 cagagaggga agatgaggaa gccagag 27
 <210> 290
 <211> 42
 <212> DNA
 <213> Artificial
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 <222> 1-42
 <223> Synthetic construct.
 <400> 290
 ctgtgtact gcccttggac cctggggacc gagtgtctct gc 42
 <210> 291
 <211> 1570
 <212> DNA
 <213> Homo sapiens
 <400> 291
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 tagccgcca gcctcgacgc cgtcccgga cccctgtgct ctgcgcgaag 100
 ccctggcccc gggggccggg gcatgggcca ggggcgcggg gtgaagcggc 150

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ttcccgcggg gccgtgactg ggcgggcttc agccatgaag accctcatag 200
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aaaaaaaaaa aaaaaaaaaa 1570

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| | | | |
|-----------------|-------------------------|-------------------------|-----|
| Ala Asp Leu Val | Pro Ile Tyr Ser Phe | Gly Glu Asn Glu Val Tyr | |
| | 275 | 280 | 285 |
| Lys Gln Val Ile | Phe Glu Glu Gly Ser Trp | Gly Arg Trp Val Gln | |
| | 290 | 295 | 300 |
| Lys Lys Phe Gln | Lys Tyr Ile Gly Phe | Ala Pro Cys Ile Phe His | |
| | 305 | 310 | 315 |
| Gly Arg Gly Leu | Phe Ser Ser Asp Thr | Trp Gly Leu Val Pro Tyr | |
| | 320 | 325 | 330 |
| Ser Lys Pro Ile | Thr Thr Val Val Gly | Glu Pro Ile Thr Ile Pro | |
| | 335 | 340 | 345 |
| Lys Leu Glu His | Pro Thr Gln Gln Asp | Ile Asp Leu Tyr His Thr | |
| | 350 | 355 | 360 |
| Met Tyr Met Glu | Ala Leu Val Lys Leu | Phe Asp Lys His Lys Thr | |
| | 365 | 370 | 375 |
| Lys Phe Gly Leu | Pro Glu Thr Glu Val | Leu Glu Val Asn | |
| | 380 | 385 | |

<210> 293
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<212> DNA
<213> Artificial

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<222> 1-24
<223> Synthetic construct.

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<210> 294
<211> 24
<212> DNA
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<220>
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<222> 1-24
<223> Synthetic construct.

<400> 294
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<210> 295
<211> 50
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<220>

<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 295
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<210> 296
<211> 3060
<212> DNA
<213> Homo sapiens

<400> 296
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 <211> 368
 <212> PRT
 <213> Homo sapiens

<400> 297
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 Val Gln Leu Cys Thr Leu Ala Leu Trp Pro Val Ser Lys Gln Leu
 35 40 45
 Tyr Arg Arg Leu Asn Cys Arg Leu Ala Tyr Ser Leu Trp Ser Gln
 50 55 60
 Leu Val Met Leu Leu Glu Trp Trp Ser Cys Thr Glu Cys Thr Leu
 65 70 75
 Phe Thr Asp Gln Ala Thr Val Glu Arg Phe Gly Lys Glu His Ala
 80 85 90
 Val Ile Ile Leu Asn His Asn Phe Glu Ile Asp Phe Leu Cys Gly
 95 100 105
 Trp Thr Met Cys Glu Arg Phe Gly Val Leu Gly Ser Ser Lys Val
 110 115 120
 Leu Ala Lys Lys Glu Leu Leu Tyr Val Pro Leu Ile Gly Trp Thr
 125 130 135
 Trp Tyr Phe Leu Glu Ile Val Phe Cys Lys Arg Lys Trp Glu Glu
 140 145 150
 Asp Arg Asp Thr Val Val Glu Gly Leu Arg Arg Leu Ser Asp Tyr
 155 160 165

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Tyr | Met | Trp | Phe | Leu | Leu | Tyr | Cys | Glu | Gly | Thr | Arg | Phe |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Thr | Glu | Thr | Lys | His | Arg | Val | Ser | Met | Glu | Val | Ala | Ala | Ala | Lys |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gly | Leu | Pro | Val | Leu | Lys | Tyr | His | Leu | Leu | Pro | Arg | Thr | Lys | Gly |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Phe | Thr | Thr | Ala | Val | Lys | Cys | Leu | Arg | Gly | Thr | Val | Ala | Ala | Val |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Tyr | Asp | Val | Thr | Leu | Asn | Phe | Arg | Gly | Asn | Lys | Asn | Pro | Ser | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | Gly | Ile | Leu | Tyr | Gly | Lys | Lys | Tyr | Glu | Ala | Asp | Met | Cys | Val |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Arg | Arg | Phe | Pro | Leu | Glu | Asp | Ile | Pro | Leu | Asp | Glu | Lys | Glu | Ala |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Ala | Gln | Trp | Leu | His | Lys | Leu | Tyr | Gln | Glu | Lys | Asp | Ala | Leu | Gln |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Glu | Ile | Tyr | Asn | Gln | Lys | Gly | Met | Phe | Pro | Gly | Glu | Gln | Phe | Lys |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Pro | Ala | Arg | Arg | Pro | Trp | Thr | Leu | Leu | Asn | Phe | Leu | Ser | Trp | Ala |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Thr | Ile | Leu | Leu | Ser | Pro | Leu | Phe | Ser | Phe | Val | Leu | Gly | Val | Phe |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Ala | Ser | Gly | Ser | Pro | Leu | Leu | Ile | Leu | Thr | Phe | Leu | Gly | Phe | Val |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Gly | Ala | Ala | Ser | Phe | Gly | Val | Arg | Arg | Leu | Ile | Gly | Glu | Ser | Leu |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Glu | Pro | Gly | Arg | Trp | Arg | Leu | Gln | | | | | | | |
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<210> 298
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 298
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<210> 299
 <211> 21
 <212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-21

<223> Synthetic construct.

<400> 299

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<210> 300

<211> 45

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-45

<223> Synthetic construct.

<400> 300

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<210> 301

<211> 1334

<212> DNA

<213> Homo sapiens

<400> 301

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 tgcttttagca ctggggcact tcttgcttat ttcttttgga ggaaaggggc 150
 tcagtttgtc ttgtgggggt ggtggcaggc aggccggctt acgcctgata 200
 cggccctggg ttagaaggga aggaagata aacttttata caaatgggga 250
 tagctggggg ctgagacctg cttcctcagt aaaattcctg ggatctgcct 300
 ataccttctt ttctctaacc tggcataccc tgcttaaagc ctctcagggc 350
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 gtctggcccc tgccccctg gccagcttca ttgtacatgt ggtgttctct 450
 tgctgttcct gtaatgtggt atgccatggg gtctttgcac aagcctttcc 500
 tctttggctg gacactgttc cctgcccccc ccatactctt cctacttaat 550
 atgtagtcat cctgcagatt tcaattctaa catcattttc tccagggatc 600
 ctggcctgac agaattctcat cttgtttaat gctctcataa gaccatttgt 650
 ttcccttttg cagcacttgc cactcagttg tatctttatg tgcgtttgtg 700
 gttgtatggg ttgtgtctgt tccccagaat gccagctct gagctgcgtg 750

| | | | | | |
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| agggtcaagg | gcattgctgt | gcctgccagg | tatagtgcct | acatgtggtg | 800 |
| ggtgctcatg | ttttagagac | taaatggagg | aggagatgag | gaaaagattg | 850 |
| aaatctctca | gttcaccaga | tggtgtaggg | cccagcattg | taaattcaca | 900 |
| cgttgactgt | gcttgtgaat | tatctgggga | tgcaggtcct | gattcagtag | 950 |
| gcccagggtg | ggcatctcta | acaaactccc | acgtgatgct | gatgctggtc | 1000 |
| ctatgaacta | tactaaatag | taagaatcta | tggagccagg | ctgggcatgg | 1050 |
| tggctcacac | ctatgatccc | agcactttgg | gaggctgagg | caggctgatc | 1100 |
| acctggagtc | aggatttcaa | gactagcctg | gccaacatgg | tggaacccca | 1150 |
| tctgtactaa | aaatacacia | attagctggg | catggtggca | catgcctgta | 1200 |
| gtcccagcta | cttggggaggc | tgaagcaaga | gaatcgcttg | aacctgggag | 1250 |
| gcggagggtg | cagtgagccg | agatcaggcc | actgtattcc | aaccagggtg | 1300 |
| acagagtga | actctatgtc | caaaaaaaaa | aaaa | 1334 | |

<211> 143

<212> PRT

<213> Homo sapiens

<400> 302

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| Met 1 | His | His | Ser | Leu 5 | Gln | Cys | Pro | Gly | Ala 10 | Ala | Thr | Arg | His | Ile 15 |
| His | Leu | Cys | Val | Cys 20 | Phe | Ser | Phe | Ala | Leu 25 | Ala | Leu | Gly | His | Phe 30 |
| Leu | Leu | Ile | Ser | Leu 35 | Val | Gly | Lys | Gly | Leu 40 | Ser | Leu | Ser | Cys | Gly 45 |
| Val | Gly | Gly | Arg | Gln 50 | Ala | Gly | Leu | Arg | Leu 55 | Ile | Arg | Pro | Trp | Val 60 |
| Arg | Arg | Glu | Gly | Lys 65 | Ile | Asn | Phe | Tyr | Thr 70 | Asn | Gly | Asp | Ser | Trp 75 |
| Gly | Leu | Arg | Pro | Ala 80 | Ser | Ser | Val | Lys | Phe 85 | Leu | Gly | Ser | Ala | Tyr 90 |
| Thr | Phe | Phe | Ser | Leu 95 | Thr | Trp | His | Thr | Leu 100 | Leu | Lys | Ala | Ser | Gln 105 |
| Gly | Phe | Ser | Leu | Phe 110 | Leu | Gly | Ser | Lys | Tyr 115 | Leu | Glu | Leu | Gln | Glu 120 |
| Pro | Ser | Trp | Ser | Gly 125 | Pro | Cys | Pro | Pro | Gly 130 | Gln | Leu | His | Cys | Thr 135 |
| Cys | Gly | Val | Leu | Leu | Ser | Phe | Leu | | | | | | | |

140

<210> 303
<211> 1768
<212> DNA
<213> Homo sapiens

<400> 303
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tttttcagca actaaaaaag ccacaggagt tgaactgcta ggattctgac 150
tatgctgtgg tggctagtgc tcctactcct acctacatta aaatctgttt 200
tttgttctct tgtaactagc ctttaccttc ctaacacaga ggatctgtca 250
ctgtggctct ggcccaaacc tgaccttcac tctggaacga gaacagaggt 300
ttctaccac accgtccct cgaagccggg gacagcctca ccttgctggc 350
ctctcgctgg agcagtggcc tcaccaactg tctcacgtct ggaggcactg 400
actcgggcag tgcaggtagc tgagcctctt ggtagctgcg gctttcaagg 450
tgggccttgc cctggccgta gaagggattg acaagccga agatttcata 500
ggcgatggct cccactgccc aggcacagc cttgctgtag tcaatcactg 550
ccctggggcc aggacgggcc gtggacacct gctcagaagc agtgggtgag 600
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gttgggttat cacaaggcat cgagtctcct gcattcagtg gacatgtggg 900
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gaggccgagg cgggtagatc acctgaggtc aggagttcaa gaccagcctg 1550
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gagaattact tgaacctggg aggtgaagga ggctgagaca ggagaatcac 1700
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<210> 304
<211> 109
<212> PRT
<213> Homo sapiens

<400> 304
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20 25 30
Asp Leu Ser Leu Trp Leu Trp Pro Lys Pro Asp Leu His Ser Gly
35 40 45
Thr Arg Thr Glu Val Ser Thr His Thr Val Pro Ser Lys Pro Gly
50 55 60
Thr Ala Ser Pro Cys Trp Pro Leu Ala Gly Ala Val Pro Ser Pro
65 70 75
Thr Val Ser Arg Leu Glu Ala Leu Thr Arg Ala Val Gln Val Ala
80 85 90
Glu Pro Leu Gly Ser Cys Gly Phe Gln Gly Gly Pro Cys Pro Gly
95 100 105
Arg Arg Arg Asp

<210> 305
<211> 989
<212> DNA
<213> Homo sapiens

<400> 305

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 ccgccttcgc cactggcctc ttcctgggga ggcggtgccc cccatggcga 200
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<210> 306

<211> 262

<212> PRT

<213> Homo sapiens

<400> 306

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Gln | Pro | Val | Pro | Arg | Leu | Ser | Val | Pro | Ala | Ala | Leu | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Ser | Ala | Ala | Leu | Gly | Ala | Ala | Phe | Ala | Thr | Gly | Leu | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Gly | Arg | Arg | Cys | Pro | Pro | Trp | Arg | Gly | Arg | Arg | Glu | Gln | Cys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Leu | Pro | Pro | Glu | Asp | Ser | Arg | Leu | Trp | Gln | Tyr | Leu | Leu | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |

Arg Ser Met Arg Glu His Pro Ala Leu Arg Ser Leu Arg Leu Leu
65 70 75
Thr Leu Glu Gln Pro Gln Gly Asp Ser Met Met Thr Cys Glu Gln
80 85 90
Ala Gln Leu Leu Ala Asn Leu Ala Arg Leu Ile Gln Ala Lys Lys
95 100 105
Ala Leu Asp Leu Gly Thr Phe Thr Gly Tyr Ser Ala Leu Ala Leu
110 115 120
Ala Leu Ala Leu Pro Ala Asp Gly Arg Val Val Thr Cys Glu Val
125 130 135
Asp Ala Gln Pro Pro Glu Leu Gly Arg Pro Leu Trp Arg Gln Ala
140 145 150
Glu Ala Glu His Lys Ile Asp Leu Arg Leu Lys Pro Ala Leu Glu
155 160 165
Thr Leu Asp Glu Leu Leu Ala Ala Gly Glu Ala Gly Thr Phe Asp
170 175 180
Val Ala Val Val Asp Ala Asp Lys Glu Asn Cys Ser Ala Tyr Tyr
185 190 195
Glu Arg Cys Leu Gln Leu Leu Arg Pro Gly Gly Ile Leu Ala Val
200 205 210
Leu Arg Val Leu Trp Arg Gly Lys Val Leu Gln Pro Pro Lys Gly
215 220 225
Asp Val Ala Ala Glu Cys Val Arg Asn Leu Asn Glu Arg Ile Arg
230 235 240
Arg Asp Val Arg Val Tyr Ile Ser Leu Leu Pro Leu Gly Asp Gly
245 250 255
Leu Thr Leu Ala Phe Lys Ile
260

<210> 307
<211> 2272
<212> DNA
<213> Homo sapiens

<400> 307
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<210> 308
<211> 671
<212> PRT
<213> Homo sapiens

<400> 308
Met Pro His Ala Phe Lys Pro Gly Asp Leu Val Phe Ala Lys Met
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Lys Gly Tyr Pro His Trp Pro Ala Arg Ile Asp Asp Ile Ala Asp
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35 40 45
Gly Thr His Glu Thr Ala Phe Leu Gly Pro Lys Asp Leu Phe Pro
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Tyr Asp Lys Cys Lys Asp Lys Tyr Gly Lys Pro Asn Lys Arg Lys
65 70 75
Gly Phe Asn Glu Gly Leu Trp Glu Ile Gln Asn Asn Pro His Ala
80 85 90
Ser Tyr Ser Ala Pro Pro Pro Val Ser Ser Ser Asp Ser Glu Ala
95 100 105
Pro Glu Ala Asn Pro Ala Asp Gly Ser Asp Ala Asp Glu Asp Asp
110 115 120
Glu Asp Arg Gly Val Met Ala Val Thr Ala Val Thr Ala Thr Ala
125 130 135
Ala Ser Asp Arg Met Glu Ser Asp Ser Asp Ser Asp Lys Ser Ser

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| Asp | Asn | Ser | Gly | Leu | Lys | Arg | Lys | Thr | Pro | Ala | Leu | Lys | Met | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Val | Ser | Lys | Arg | Ala | Arg | Lys | Ala | Ser | Ser | Asp | Leu | Asp | Gln | Ala |
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| Ser | Val | Ser | Pro | Ser | Glu | Glu | Glu | Asn | Ser | Glu | Ser | Ser | Ser | Glu |
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| Ser | Glu | Lys | Thr | Ser | Asp | Gln | Asp | Phe | Thr | Pro | Glu | Lys | Lys | Ala |
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| Lys | Lys | Ala | Pro | Ser | Ala | Ser | Asp | Ser | Asp | Ser | Lys | Ala | Asp | Ser |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Asp | Gly | Ala | Lys | Pro | Glu | Pro | Val | Ala | Met | Ala | Arg | Ser | Ala | Ser |
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| Ser | Ser | Ser | Ser | Ser | Ser | Ser | Ser | Ser | Asp | Ser | Asp | Val | Ser | Val |
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| Lys | Lys | Pro | Pro | Arg | Gly | Arg | Lys | Pro | Ala | Glu | Lys | Pro | Leu | Pro |
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| Lys | Pro | Arg | Gly | Arg | Lys | Pro | Lys | Pro | Glu | Arg | Pro | Pro | Ser | Ser |
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| Ser | Ser | Ser | Asp | Ser | Asp | Ser | Asp | Glu | Val | Asp | Arg | Ile | Ser | Glu |
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| Trp | Lys | Arg | Arg | Asp | Glu | Ala | Arg | Arg | Arg | Glu | Leu | Glu | Ala | Arg |
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| Arg | Arg | Arg | Glu | Gln | Glu | Glu | Glu | Leu | Arg | Arg | Leu | Arg | Glu | Gln |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Glu | Lys | Glu | Glu | Lys | Glu | Arg | Arg | Arg | Glu | Arg | Ala | Asp | Arg | Gly |
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| Glu | Ala | Glu | Arg | Gly | Ser | Gly | Gly | Ser | Ser | Gly | Asp | Glu | Leu | Arg |
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| Glu | Asp | Asp | Glu | Pro | Val | Lys | Lys | Arg | Gly | Arg | Lys | Gly | Arg | Gly |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Arg | Gly | Pro | Pro | Ser | Ser | Ser | Asp | Ser | Glu | Pro | Glu | Ala | Glu | Leu |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Glu | Arg | Glu | Ala | Lys | Lys | Ser | Ala | Lys | Lys | Pro | Gln | Ser | Ser | Ser |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Thr | Glu | Pro | Ala | Arg | Lys | Pro | Gly | Gln | Lys | Glu | Lys | Arg | Val | Arg |
| | | | | 425 | | | | | 430 | | | | | 435 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Glu | Lys | Gln | Gln | Ala | Lys | Pro | Val | Lys | Val | Glu | Arg | Thr | 440 | 445 | 450 |
| Arg | Lys | Arg | Ser | Glu | Gly | Phe | Ser | Met | Asp | Arg | Lys | Val | Glu | Lys | 455 | 460 | 465 |
| Lys | Lys | Glu | Pro | Ser | Val | Glu | Glu | Lys | Leu | Gln | Lys | Leu | His | Ser | 470 | 475 | 480 |
| Glu | Ile | Lys | Phe | Ala | Leu | Lys | Val | Asp | Ser | Pro | Asp | Val | Lys | Arg | 485 | 490 | 495 |
| Cys | Leu | Asn | Ala | Leu | Glu | Glu | Leu | Gly | Thr | Leu | Gln | Val | Thr | Ser | 500 | 505 | 510 |
| Gln | Ile | Leu | Gln | Lys | Asn | Thr | Asp | Val | Val | Ala | Thr | Leu | Lys | Lys | 515 | 520 | 525 |
| Ile | Arg | Arg | Tyr | Lys | Ala | Asn | Lys | Asp | Val | Met | Glu | Lys | Ala | Ala | 530 | 535 | 540 |
| Glu | Val | Tyr | Thr | Arg | Leu | Lys | Ser | Arg | Val | Leu | Gly | Pro | Lys | Ile | 545 | 550 | 555 |
| Glu | Ala | Val | Gln | Lys | Val | Asn | Lys | Ala | Gly | Met | Glu | Lys | Glu | Lys | 560 | 565 | 570 |
| Ala | Glu | Glu | Lys | Leu | Ala | Gly | Glu | Glu | Leu | Ala | Gly | Glu | Glu | Ala | 575 | 580 | 585 |
| Pro | Gln | Glu | Lys | Ala | Glu | Asp | Lys | Pro | Ser | Thr | Asp | Leu | Ser | Ala | 590 | 595 | 600 |
| Pro | Val | Asn | Gly | Glu | Ala | Thr | Ser | Gln | Lys | Gly | Glu | Ser | Ala | Glu | 605 | 610 | 615 |
| Asp | Lys | Glu | His | Glu | Glu | Gly | Arg | Asp | Ser | Glu | Glu | Gly | Pro | Arg | 620 | 625 | 630 |
| Cys | Gly | Ser | Ser | Glu | Asp | Leu | His | Asp | Ser | Val | Arg | Glu | Gly | Pro | 635 | 640 | 645 |
| Asp | Leu | Asp | Arg | Pro | Gly | Ser | Asp | Arg | Gln | Glu | Arg | Glu | Arg | Ala | 650 | 655 | 660 |
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 <213> Homo sapiens

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 20 25 30
 Phe Leu Pro Val Thr Gly Thr Leu Lys Gln Asn Ile Pro Arg Leu
 35 40 45
 Lys Leu Thr Tyr Lys Asp Leu Leu Leu Ser Asn Ser Cys Ile Pro
 50 55 60
 Phe Leu Gly Ser Ser Glu Gly Leu Asp Phe Gln Thr Leu Leu Leu
 65 70 75
 Asp Glu Glu Arg Gly Arg Leu Leu Leu Gly Ala Lys Asp His Ile

| 80 | | | | | | | | | | 85 | | | | | 90 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Phe | Leu | Leu | Ser | Leu | Val | Asp | Leu | Asn | Lys | Asn | Phe | Lys | Lys | Ile | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Tyr | Trp | Pro | Ala | Ala | Lys | Glu | Arg | Val | Glu | Leu | Cys | Lys | Leu | Ala | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Gly | Lys | Asp | Ala | Asn | Thr | Glu | Cys | Ala | Asn | Phe | Ile | Arg | Val | Leu | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Gln | Pro | Tyr | Asn | Lys | Thr | His | Ile | Tyr | Val | Cys | Gly | Thr | Gly | Ala | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Phe | His | Pro | Ile | Cys | Gly | Tyr | Ile | Asp | Leu | Gly | Val | Tyr | Lys | Glu | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Asp | Ile | Ile | Phe | Lys | Leu | Asp | Thr | His | Asn | Leu | Glu | Ser | Gly | Arg | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Leu | Lys | Cys | Pro | Phe | Asp | Pro | Gln | Gln | Pro | Phe | Ala | Ser | Val | Met | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Thr | Asp | Glu | Tyr | Leu | Tyr | Ser | Gly | Thr | Ala | Ser | Asp | Phe | Leu | Gly | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Lys | Asp | Thr | Ala | Phe | Thr | Arg | Ser | Leu | Gly | Pro | Thr | His | Asp | His | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| His | Tyr | Ile | Arg | Thr | Asp | Ile | Ser | Glu | His | Tyr | Trp | Leu | Asn | Gly | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Ala | Lys | Phe | Ile | Gly | Thr | Phe | Phe | Ile | Pro | Asp | Thr | Tyr | Asn | Pro | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Asp | Asp | Asp | Lys | Ile | Tyr | Phe | Phe | Phe | Arg | Glu | Ser | Ser | Gln | Glu | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Gly | Ser | Thr | Ser | Asp | Lys | Thr | Ile | Leu | Ser | Arg | Val | Gly | Arg | Val | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Cys | Lys | Asn | Asp | Val | Gly | Gly | Gln | Arg | Ser | Leu | Ile | Asn | Lys | Trp | | | | | |
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| Thr | Thr | Phe | Leu | Lys | Ala | Arg | Leu | Ile | Cys | Ser | Ile | Pro | Gly | Ser | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Asp | Gly | Ala | Asp | Thr | Tyr | Phe | Asp | Glu | Leu | Gln | Asp | Ile | Tyr | Leu | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Leu | Pro | Thr | Arg | Asp | Glu | Arg | Asn | Pro | Val | Val | Tyr | Gly | Val | Phe | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Thr | Thr | Thr | Ser | Ser | Ile | Phe | Lys | Gly | Ser | Ala | Val | Cys | Val | Tyr | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Ser | Met | Ala | Asp | Ile | Arg | Ala | Val | Phe | Asn | Gly | Pro | Tyr | Ala | His | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Glu | Ser | Ala | Asp | His | Arg | Trp | Val | Gln | Tyr | Asp | Gly | Arg | Ile |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Pro | Tyr | Pro | Arg | Pro | Gly | Thr | Cys | Pro | Ser | Lys | Thr | Tyr | Asp | Pro |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Leu | Ile | Lys | Ser | Thr | Arg | Asp | Phe | Pro | Asp | Asp | Val | Ile | Ser | Phe |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Ile | Lys | Arg | His | Ser | Val | Met | Tyr | Lys | Ser | Val | Tyr | Pro | Val | Ala |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Gly | Gly | Pro | Thr | Phe | Lys | Arg | Ile | Asn | Val | Asp | Tyr | Arg | Leu | Thr |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Gln | Ile | Val | Val | Asp | His | Val | Ile | Ala | Glu | Asp | Gly | Gln | Tyr | Asp |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Val | Met | Phe | Leu | Gly | Thr | Asp | Ile | Gly | Thr | Val | Leu | Lys | Val | Val |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Ser | Ile | Ser | Lys | Glu | Lys | Trp | Asn | Met | Glu | Glu | Val | Val | Leu | Glu |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Glu | Leu | Gln | Ile | Phe | Lys | His | Ser | Ser | Ile | Ile | Leu | Asn | Met | Glu |
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| Leu | Ser | Leu | Lys | Gln | Gln | Gln | Leu | Tyr | Ile | Gly | Ser | Arg | Asp | Gly |
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| Leu | Val | Gln | Leu | Ser | Leu | His | Arg | Cys | Asp | Thr | Tyr | Gly | Lys | Ala |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Cys | Ala | Asp | Cys | Cys | Leu | Ala | Arg | Asp | Pro | Tyr | Cys | Ala | Trp | Asp |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Gly | Asn | Ala | Cys | Ser | Arg | Tyr | Ala | Pro | Thr | Ser | Lys | Arg | Arg | Ala |
| | | | | 560 | | | | | 565 | | | | | 570 |
| Arg | Arg | Gln | Asp | Val | Lys | Tyr | Gly | Asp | Pro | Ile | Thr | Gln | Cys | Trp |
| | | | | 575 | | | | | 580 | | | | | 585 |
| Asp | Ile | Glu | Asp | Ser | Ile | Ser | His | Glu | Thr | Ala | Asp | Glu | Lys | Val |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Ile | Phe | Gly | Ile | Glu | Phe | Asn | Ser | Thr | Phe | Leu | Glu | Cys | Ile | Pro |
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| Lys | Ser | Gln | Gln | Ala | Thr | Ile | Lys | Trp | Tyr | Ile | Gln | Arg | Ser | Gly |
| | | | | 620 | | | | | 625 | | | | | 630 |
| Asp | Glu | His | Arg | Glu | Glu | Leu | Lys | Pro | Asp | Glu | Arg | Ile | Ile | Lys |
| | | | | 635 | | | | | 640 | | | | | 645 |
| Thr | Glu | Tyr | Gly | Leu | Leu | Ile | Arg | Ser | Leu | Gln | Lys | Lys | Asp | Ser |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Gly | Met | Tyr | Tyr | Cys | Lys | Ala | Gln | Glu | His | Thr | Phe | Ile | His | Thr |

| | | |
|-------------------------------------|-------------------------|-----|
| Ile Val Lys Leu Thr Leu Asn Val Ile | Glu Asn Glu Gln Met Glu | |
| 680 | 685 | 690 |
| Asn Thr Gln Arg Ala Glu His Glu Glu | Gly Gln Val Lys Asp Leu | |
| 695 | 700 | 705 |
| Leu Ala Glu Ser Arg Leu Arg Tyr Lys | Asp Tyr Ile Gln Ile Leu | |
| 710 | 715 | 720 |
| Ser Ser Pro Asn Phe Ser Leu Asp Gln | Tyr Cys Glu Gln Met Trp | |
| 725 | 730 | 735 |
| His Arg Glu Lys Arg Arg Gln Arg Asn | Lys Gly Gly Pro Lys Trp | |
| 740 | 745 | 750 |
| Lys His Met Gln Glu Met Lys Lys Lys | Arg Asn Arg Arg His His | |
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| 770 | 775 | |

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 <211> 24
 <212> DNA
 <213> Artificial

<220>
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 <222> 1-24
 <223> Synthetic construct.

<400> 312
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<210> 313
 <211> 45
 <212> DNA
 <213> Artificial

<220>
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 <223> Synthetic construct.

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Pro Ser Ile Glu Gln Arg Leu Gln Glu Val Arg Glu Ser Ile Arg
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Arg Ala Gln Val Ser Gln Val Lys Gly Ala Ala Arg Leu Ala Leu
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Leu Gln Gly Ala Gly Leu Asp Val Glu Arg Trp Leu Lys Pro Ala
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Met Thr Gln Ala Gln Asp Glu Val Glu Gln Glu Arg Arg Leu Ser
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Glu Ala Arg Leu Ser Gln Arg Asp Leu Ser Pro Thr Ala Glu Asp
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Ala Glu Leu Ser Asp Phe Glu Glu Cys Glu Glu Thr Gly Glu Leu
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Phe Glu Glu Pro Ala Pro Gln Ala Leu Ala Thr Arg Ala Leu Pro
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Cys Pro Ala His Val Val Phe Arg Tyr Gln Ala Gly Arg Glu Asp
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Glu Leu Thr Ile Thr Glu Gly Glu Trp Leu Glu Val Ile Glu Glu
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Gly Asp Ala Asp Glu Trp Val Lys Ala Arg Asn Gln His Gly Glu
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Val Gly Phe Val Pro Glu Arg Tyr Leu Asn Phe Pro Asp Leu Ser
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Pro Thr Ala Phe Leu Ala Gln Ala Leu Tyr Ser Tyr Thr Gly Gln
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Glu Phe Gly Gly Arg Val Gly Val Phe Pro Ser Leu Leu Val Glu
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Gln Met Leu Pro Ser Pro Ser Pro Pro Ser Phe Ser Pro Pro Ala

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| Asp Lys Ala Leu Asp Phe Pro Gly Phe Leu Asp Met Met Ala Pro | | |
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Leu Pro Ser Ala Arg Leu Ala Ser Pro Leu Pro Arg Glu Glu Glu
50 55 60
Ile Val Phe Pro Glu Lys Leu Asn Gly Ser Val Leu Pro Gly Ser
65 70 75
Gly Ala Pro Ala Arg Leu Leu Cys Arg Leu Gln Ala Phe Gly Glu
80 85 90
Thr Leu Leu Leu Glu Leu Glu Gln Asp Ser Gly Val Gln Val Glu
95 100 105
Gly Leu Thr Val Gln Tyr Leu Gly Gln Ala Pro Glu Leu Leu Gly
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Gly Ala Glu Pro Gly Thr Tyr Leu Thr Gly Thr Ile Asn Gly Asp
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Pro Glu Ser Val Ala Ser Leu His Trp Asp Gly Gly Ala Leu Leu

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| | 140 | | 145 | | 150 |
| Gly Val Leu Gln Tyr Arg Gly Ala Glu Leu His Leu Gln Pro Leu | 155 | | 160 | | 165 |
| Glu Gly Gly Thr Pro Asn Ser Ala Gly Gly Pro Gly Ala His Ile | 170 | | 175 | | 180 |
| Leu Arg Arg Lys Ser Pro Ala Ser Gly Gln Gly Pro Met Cys Asn | 185 | | 190 | | 195 |
| Val Lys Ala Pro Leu Gly Ser Pro Ser Pro Arg Pro Arg Arg Ala | 200 | | 205 | | 210 |
| Lys Arg Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val Val | 215 | | 220 | | 225 |
| Ala Asp Asp Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg | 230 | | 235 | | 240 |
| Tyr Leu Leu Thr Val Met Ala Ala Ala Ala Lys Ala Phe Lys His | 245 | | 250 | | 255 |
| Pro Ser Ile Arg Asn Pro Val Ser Leu Val Val Thr Arg Leu Val | 260 | | 265 | | 270 |
| Ile Leu Gly Ser Gly Glu Glu Gly Pro Gln Val Gly Pro Ser Ala | 275 | | 280 | | 285 |
| Ala Gln Thr Leu Arg Ser Phe Cys Ala Trp Gln Arg Gly Leu Asn | 290 | | 295 | | 300 |
| Thr Pro Glu Asp Ser Gly Pro Asp His Phe Asp Thr Ala Ile Leu | 305 | | 310 | | 315 |
| Phe Thr Arg Gln Asp Leu Cys Gly Val Ser Thr Cys Asp Thr Leu | 320 | | 325 | | 330 |
| Gly Met Ala Asp Val Gly Thr Val Cys Asp Pro Ala Arg Ser Cys | 335 | | 340 | | 345 |
| Ala Ile Val Glu Asp Asp Gly Leu Gln Ser Ala Phe Thr Ala Ala | 350 | | 355 | | 360 |
| His Glu Leu Gly His Val Phe Asn Met Leu His Asp Asn Ser Lys | 365 | | 370 | | 375 |
| Pro Cys Ile Ser Leu Asn Gly Pro Leu Ser Thr Ser Arg His Val | 380 | | 385 | | 390 |
| Met Ala Pro Val Met Ala His Val Asp Pro Glu Glu Pro Trp Ser | 395 | | 400 | | 405 |
| Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu Asp Asn Gly Tyr | 410 | | 415 | | 420 |
| Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu His Leu Pro | 425 | | 430 | | 435 |

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| Tyr | Ala | Leu | Asn | Gly | Glu | Tyr | Thr | Leu | Met | Pro | Ser | Pro | Thr | Asp | | | | | | | | | | | | | | | |
| | | | | 740 | | | | | 745 | | | | | 750 | | | | | | | | | | | | | | | |
| Val | Val | Leu | Pro | Gly | Ala | Val | Ser | Leu | Arg | Tyr | Ser | Gly | Ala | Thr | | | | | | | | | | | | | | | |
| | | | | 755 | | | | | 760 | | | | | 765 | | | | | | | | | | | | | | | |
| Ala | Ala | Ser | Glu | Thr | Leu | Ser | Gly | His | Gly | Pro | Leu | Ala | Gln | Pro | | | | | | | | | | | | | | | |
| | | | | 770 | | | | | 775 | | | | | 780 | | | | | | | | | | | | | | | |
| Leu | Thr | Leu | Gln | Val | Leu | Val | Ala | Gly | Asn | Pro | Gln | Asp | Thr | Arg | | | | | | | | | | | | | | | |
| | | | | 785 | | | | | 790 | | | | | 795 | | | | | | | | | | | | | | | |
| Leu | Arg | Tyr | Ser | Phe | Phe | Val | Pro | Arg | Pro | Thr | Pro | Ser | Thr | Pro | | | | | | | | | | | | | | | |
| | | | | 800 | | | | | 805 | | | | | 810 | | | | | | | | | | | | | | | |
| Arg | Pro | Thr | Pro | Gln | Asp | Trp | Leu | His | Arg | Arg | Ala | Gln | Ile | Leu | | | | | | | | | | | | | | | |
| | | | | 815 | | | | | 820 | | | | | 825 | | | | | | | | | | | | | | | |
| Glu | Ile | Leu | Arg | Arg | Arg | Pro | Trp | Ala | Gly | Arg | Lys | | | | | | | | | | | | | | | | | | |
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<210> 322

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<400> 323
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 cagggaactg cccggtcggc ctaggcaggc agccgcacca tggccagcac 100
 ggccgtgcag cttctgggct tcctgctcag cttcctgggc atggtgggca 150
 cgttgatcac caccatcctg ccgcactggc ggaggacagc gcacgtgggc 200
 accaacatcc tcacggccgt gtcctacctg aaagggtctt ggatggagtg 250
 tgtgtggcac agcacaggca tctaccagtg ccagatctac cgatccctgc 300
 tggcgctgcc ccaagacctc caggctgccc gcgccctcat ggtcatctcc 350
 tgcctgctct cgggcatagc ctgcgcctgc gccgtcatcg ggatgaagtg 400
 cacgcgctgc gccaaaggca caccgcgcaa gaccacctt gccatcctcg 450
 gcggcaccct cttcatcctg gccggcctcc tgtgcatggt ggccgtctcc 500
 tggaccacca acgacgtggt gcagaacttc tacaaccgcg tgctgcccag 550
 cggcatgaag tttgagattg gccaggccct gtacctgggc ttcattctct 600
 cgccctcttc gctcattggt ggcaccctgc tttgcctgtc ctgccaggac 650
 gaggcaccct acaggcccta ccaggccccg cccagggcca ccacgaccac 700
 tgcaaacacc gcacctgcct accagccacc agctgcctac aaagacaatc 750
 gggccccctc agtgacctcg gccacgcaca gcgggtacag gctgaacgac 800
 tacgtgtgag tccccacagc ctgcttctcc cctgggctgc tgtgggctgg 850
 gtccccggcg ggactgtcaa tggaggcagg ggttcagca caaagtttac 900
 ttctgggcaa tttttgtatc caaggaaata atgtgaatgc gaggaatgt 950
 ctttagagca caggacaga gggggaaata agaggaggag aaagctctct 1000

ataccaaaga ctgaaaaaaa aaatcctgtc tgtttttgta tttattatat 1050
 atatttatgt gggtgatttg ataacaagtt taatataaag tgacttgga 1100
 gtttggtcag tgggggttggg ttgtgatcca ggaataaacc ttgcggatgt 1150
 ggctgtttat gaaaaaaaaa aaaa 1174

<210> 324
 <211> 239
 <212> PRT
 <213> Homo sapiens

<400> 324
 Met Ala Ser Thr Ala Val Gln Leu Leu Gly Phe Leu Leu Ser Phe
 1 5 10 15
 Leu Gly Met Val Gly Thr Leu Ile Thr Thr Ile Leu Pro His Trp
 20 25 30
 Arg Arg Thr Ala His Val Gly Thr Asn Ile Leu Thr Ala Val Ser
 35 40 45
 Tyr Leu Lys Gly Leu Trp Met Glu Cys Val Trp His Ser Thr Gly
 50 55 60
 Ile Tyr Gln Cys Gln Ile Tyr Arg Ser Leu Leu Ala Leu Pro Gln
 65 70 75
 Asp Leu Gln Ala Ala Arg Ala Leu Met Val Ile Ser Cys Leu Leu
 80 85 90
 Ser Gly Ile Ala Cys Ala Cys Ala Val Ile Gly Met Lys Cys Thr
 95 100 105
 Arg Cys Ala Lys Gly Thr Pro Ala Lys Thr Thr Phe Ala Ile Leu
 110 115 120
 Gly Gly Thr Leu Phe Ile Leu Ala Gly Leu Leu Cys Met Val Ala
 125 130 135
 Val Ser Trp Thr Thr Asn Asp Val Val Gln Asn Phe Tyr Asn Pro
 140 145 150
 Leu Leu Pro Ser Gly Met Lys Phe Glu Ile Gly Gln Ala Leu Tyr
 155 160 165
 Leu Gly Phe Ile Ser Ser Ser Leu Ser Leu Ile Gly Gly Thr Leu
 170 175 180
 Leu Cys Leu Ser Cys Gln Asp Glu Ala Pro Tyr Arg Pro Tyr Gln
 185 190 195
 Ala Pro Pro Arg Ala Thr Thr Thr Thr Ala Asn Thr Ala Pro Ala
 200 205 210
 Tyr Gln Pro Pro Ala Ala Tyr Lys Asp Asn Arg Ala Pro Ser Val
 215 220 225

Thr Ser Ala Thr His Ser Gly Tyr Arg Leu Asn Asp Tyr Val
230 235

<210> 325
<211> 2121
<212> DNA
<213> Homo sapiens

<400> 325
gagctcccct caggagcgcg ttagcttcac accttcggca gcaggagggc 50
ggcagcttct cgcaggcggc agggcgggcg gccaggatca tgtccaccac 100
cacatgcaa gtggtggcgt tcctcctgtc catcctgggg ctggccggct 150
gcatcgcggc caccgggatg gacatgtgga gcaccagga cctgtacgac 200
aaccccgta cctccgtgtt ccagtacgaa gggctctgga ggagctgcgt 250
gaggcagagt tcaggcttca ccgaatgcag gccctatttc accatcctgg 300
gacttccagc catgctgcag gcagtgcgag ccctgatgat cgtaggcac 350
gtcctgggtg ccattggcct cctggatatc atctttgccc tgaaatgcat 400
ccgcattggc agcatggagg actctgcaa agccaacatg aactgacct 450
ccgggatcat gttcattgtc tcaggctctt gtgcaattgc tggagtgtct 500
gtgtttgcca acatgctggt gactaacttc tggatgtcca cagctaacat 550
gtacaccggc atgggtggga tgggtgcagac tgttcagacc aggtacacat 600
ttggtgcggc tctgttcgtg ggctgggtcg ctggaggcct cactaatt 650
gggggtgtga tgatgtgcat cgcctgccgg ggctggcac cagaagaaac 700
caactacaaa gccgtttctt atcatgcctc aggccacagt gttgcctaca 750
agcctggagg cttcaaggcc agcactggct ttgggtccaa cacaaaaaac 800
aagaagatat acgatggagg tgcccgaca gaggacgagg tacaatctta 850
tccttccaag cagactatg tgtaatgtc taagacctct cagcacgggc 900
ggaagaaact cccggagagc tcacccaaaa aacaaggaga tcccatctag 950
atttcttctt gcttttgact cacagctgga agttagaaaa gcctcgattt 1000
catctttgga gaggccaaat ggtcttagcc tcagtctctg tctctaaata 1050
ttccaccata aaacagctga gttatttatg aattagaggc tatagctcac 1100
attttcaatc ctctatttct ttttttaaata ataactttct actctgatga 1150
gagaatgtgg ttttaatctc tctctcacat tttgatgatt tagacagact 1200
ccccctcttc ctctagtca ataaacccat tgatgatcta tttccagct 1250

tatccccaag aaaacttttg aaaggaaaga gtagacccaa agatgttatt 1300
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 cacttactga agaagaagca ataagagaaa gatatttgta atctctccag 1400
 cccatgatct cggtttttctt acactgtgat cttaaaagtt accaaaccaa 1450
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 tcttattaca gcaacaccat tctaggagtt tctgagctc tccactggag 1550
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 atttttttta atttaagtcc taaatatagt taaaataaat aatgttttag 1650
 taaaatgata cactatctct gtgaaatagc ctcacccta catgtggata 1700
 gaaggaaatg aaaaaataat tgctttgaca ttgtctatat ggtactttgt 1750
 aaagtcatgc ttaagtacaa attccatgaa aagctcacac ctgtaatcct 1800
 agcactttgg gaggctgagg aggaaggatc acttgagccc agaagttcga 1850
 gactagcctg ggcaacatgg agaagccctg tctctacaaa atacagagag 1900
 aaaaaatcag ccagtcattg tggcatacac ctgtagtccc agcattccgg 1950
 gaggctgagg tgggaggatc acttgagccc agggagggtg gggctgcagt 2000
 gagccatgat cacaccactg cactccagcc aggtgacata gcgagatcct 2050
 gtctaaaaaa ataaaaaata aataatggaa cacagcaagt cctaggaagt 2100
 aggttaaaac taattcttta a 2121

<210> 326
 <211> 261
 <212> PRT
 <213> Homo sapiens

<400> 326
 Met Ser Thr Thr Thr Cys Gln Val Val Ala Phe Leu Leu Ser Ile
 1 5 10 15
 Leu Gly Leu Ala Gly Cys Ile Ala Ala Thr Gly Met Asp Met Trp
 20 25 30
 Ser Thr Gln Asp Leu Tyr Asp Asn Pro Val Thr Ser Val Phe Gln
 35 40 45
 Tyr Glu Gly Leu Trp Arg Ser Cys Val Arg Gln Ser Ser Gly Phe
 50 55 60
 Thr Glu Cys Arg Pro Tyr Phe Thr Ile Leu Gly Leu Pro Ala Met
 65 70 75
 Leu Gln Ala Val Arg Ala Leu Met Ile Val Gly Ile Val Leu Gly

| 80 | 85 | 90 |
|-------------------------------------|-------------------------|-----|
| Ala Ile Gly Leu Leu Val Ser Ile Phe | Ala Leu Lys Cys Ile Arg | |
| 95 | 100 | 105 |
| Ile Gly Ser Met Glu Asp Ser Ala Lys | Ala Asn Met Thr Leu Thr | |
| 110 | 115 | 120 |
| Ser Gly Ile Met Phe Ile Val Ser Gly | Leu Cys Ala Ile Ala Gly | |
| 125 | 130 | 135 |
| Val Ser Val Phe Ala Asn Met Leu Val | Thr Asn Phe Trp Met Ser | |
| 140 | 145 | 150 |
| Thr Ala Asn Met Tyr Thr Gly Met Gly | Gly Met Val Gln Thr Val | |
| 155 | 160 | 165 |
| Gln Thr Arg Tyr Thr Phe Gly Ala Ala | Leu Phe Val Gly Trp Val | |
| 170 | 175 | 180 |
| Ala Gly Gly Leu Thr Leu Ile Gly Gly | Val Met Met Cys Ile Ala | |
| 185 | 190 | 195 |
| Cys Arg Gly Leu Ala Pro Glu Glu Thr | Asn Tyr Lys Ala Val Ser | |
| 200 | 205 | 210 |
| Tyr His Ala Ser Gly His Ser Val Ala | Tyr Lys Pro Gly Gly Phe | |
| 215 | 220 | 225 |
| Lys Ala Ser Thr Gly Phe Gly Ser Asn | Thr Lys Asn Lys Lys Ile | |
| 230 | 235 | 240 |
| Tyr Asp Gly Gly Ala Arg Thr Glu Asp | Glu Val Gln Ser Tyr Pro | |
| 245 | 250 | 255 |
| Ser Lys His Asp Tyr Val | | |
| 260 | | |

<210> 327
 <211> 2010
 <212> DNA
 <213> Homo sapiens

<400> 327
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 caacccatgc cttagaaatc gctgggctgt ttcttggttg tggtggaatg 150
 gtgggcacag tggctgtcac tgtcatgcct cagtggagag tgtcggcctt 200
 cattgaaaac aacatcgtgg tttttgaaaa cttctgggaa ggactgtgga 250
 tgaattgcgt gaggcaggct aacatcagga tgcagtgcaa aatctatgat 300
 tccctgctgg ctctttctcc ggacctacag gcagccagag gactgatgtg 350

tgctgcttcc gtgatgtcct tcttggcttt catgatggcc atccttgcca 400
 tgaaatgcac caggtgcacg ggggacaatg agaaggtgaa ggctcacatt 450
 ctgctgacgg ctggaatcat cttcatcatc acgggcatgg tgggtgctcat 500
 ccctgtgagc tgggttgcca atgccatcat cagagatttc tataactcaa 550
 tagtgaatgt tgcccaaaaa cgtgagcttg gagaagctct ctacttagga 600
 tggaccacgg cactgggtgct gattggttga ggagctctgt tctgctgcgt 650
 tttttgttgc aacgaaaaga gcagtagcta cagatactcg ataccttccc 700
 atcgcacaac ccaaaaaagt tatcacaccg gaaagaagtc accgagcgtc 750
 tactccagaa gtcagtatgt gtagttgtgt atgttttttt aactttacta 800
 taaagccatg caaatgacaa aaatctatat tacttttctca aaatggaccc 850
 caaagaaaact ttgattttact gttcttaact gcctaattctt aattacagga 900
 actgtgcatc agctatttat gattctataa gctatttcag cagaatgaga 950
 tattaaaccc aatgctttga ttgttctaga aagtatagta atttgttttc 1000
 taagggtggt caagcatcta ctctttttat catttacttc aaaatgacat 1050
 tgctaaagac tgcattattt tactactgta atttctccac gacatagcat 1100
 tatgtacata gatgagtgtg acatttatat ctcacataga gacatgctta 1150
 tatggtttta tttaaaatga aatgccagtc cattacactg aataaataga 1200
 actcaactat tgcttttcag ggaaatcatg gatagggttg aagaaggtta 1250
 ctattaattg tttaaaaaca gcttagggat taatgtcctc catttataat 1300
 gaagattaaa atgaaggctt taatcagcat tgtaaaggaa attgaatggc 1350
 tttctgatat gctgtttttt agcctaggag ttagaaatcc taacttcttt 1400
 atcctcttct cccagaggct ttttttttct tgtgtattaa attaacattt 1450
 ttaaaacgca gatattttgt caaggggctt tgcattcaaa ctgcttttcc 1500
 agggctatac tcagaagaaa gataaaagtg tgatctaaga aaaagtgatg 1550
 gtttttaggaa agtgaaaata tttttgtttt tgtatttgaa gaagaatgat 1600
 gcattttgac aagaaatcat atatgtatgg atatatttta ataagtattt 1650
 gagtacagac tttgaggttt catcaatata aataaaaagag cagaaaaata 1700
 tgtcttggtt ttcatttgct taccaaaaaa acaacaacaa aaaaagttgt 1750
 cctttgagaa cttcacctgc tcctatgtgg gtacctgagt caaaattgtc 1800

atTTTTgttc tgtgaaaaat aaatttcctt cttgtaccat ttctgttttag 1850
 ttttactaaa atctgtaaat actgtatTTT tctgttttatt ccaaatttga 1900
 tgaaactgac aatccaattt gaaagtttgt gtcgacgtct gtctagctta 1950
 aatgaatgtg ttctatttgc tttatacatt tatattaata aattgtacat 2000
 ttttctaatt 2010

<210> 328
 <211> 225
 <212> PRT
 <213> Homo sapiens

<400> 328
 Met Ala Thr His Ala Leu Glu Ile Ala Gly Leu Phe Leu Gly Gly
 1 5 10 15
 Val Gly Met Val Gly Thr Val Ala Val Thr Val Met Pro Gln Trp
 20 25 30
 Arg Val Ser Ala Phe Ile Glu Asn Asn Ile Val Val Phe Glu Asn
 35 40 45
 Phe Trp Glu Gly Leu Trp Met Asn Cys Val Arg Gln Ala Asn Ile
 50 55 60
 Arg Met Gln Cys Lys Ile Tyr Asp Ser Leu Leu Ala Leu Ser Pro
 65 70 75
 Asp Leu Gln Ala Ala Arg Gly Leu Met Cys Ala Ala Ser Val Met
 80 85 90
 Ser Phe Leu Ala Phe Met Met Ala Ile Leu Gly Met Lys Cys Thr
 95 100 105
 Arg Cys Thr Gly Asp Asn Glu Lys Val Lys Ala His Ile Leu Leu
 110 115 120
 Thr Ala Gly Ile Ile Phe Ile Ile Thr Gly Met Val Val Leu Ile
 125 130 135
 Pro Val Ser Trp Val Ala Asn Ala Ile Ile Arg Asp Phe Tyr Asn
 140 145 150
 Ser Ile Val Asn Val Ala Gln Lys Arg Glu Leu Gly Glu Ala Leu
 155 160 165
 Tyr Leu Gly Trp Thr Thr Ala Leu Val Leu Ile Val Gly Gly Ala
 170 175 180
 Leu Phe Cys Cys Val Phe Cys Cys Asn Glu Lys Ser Ser Ser Tyr
 185 190 195
 Arg Tyr Ser Ile Pro Ser His Arg Thr Thr Gln Lys Ser Tyr His
 200 205 210

tgttttgtta gtgca 1315

<210> 330

<211> 220

<212> PRT

<213> Homo sapiens

<400> 330

Met Ala Ser Ala Gly Met Gln Ile Leu Gly Val Val Leu Thr Leu
1 5 10 15

Leu Gly Trp Val Asn Gly Leu Val Ser Cys Ala Leu Pro Met Trp
20 25 30

Lys Val Thr Ala Phe Ile Gly Asn Ser Ile Val Val Ala Gln Val
35 40 45

Val Trp Glu Gly Leu Trp Met Ser Cys Val Val Gln Ser Thr Gly
50 55 60

Gln Met Gln Cys Lys Val Tyr Asp Ser Leu Leu Ala Leu Pro Gln
65 70 75

Asp Leu Gln Ala Ala Arg Ala Leu Cys Val Ile Ala Leu Leu Val
80 85 90

Ala Leu Phe Gly Leu Leu Val Tyr Leu Ala Gly Ala Lys Cys Thr
95 100 105

Thr Cys Val Glu Glu Lys Asp Ser Lys Ala Arg Leu Val Leu Thr
110 115 120

Ser Gly Ile Val Phe Val Ile Ser Gly Val Leu Thr Leu Ile Pro
125 130 135

Val Cys Trp Thr Ala His Ala Ile Ile Arg Asp Phe Tyr Asn Pro
140 145 150

Leu Val Ala Glu Ala Gln Lys Arg Glu Leu Gly Ala Ser Leu Tyr
155 160 165

Leu Gly Trp Ala Ala Ser Gly Leu Leu Leu Leu Gly Gly Gly Leu
170 175 180

Leu Cys Cys Thr Cys Pro Ser Gly Gly Ser Gln Gly Pro Ser His
185 190 195

Tyr Met Ala Arg Tyr Ser Thr Ser Ala Pro Ala Ile Ser Arg Gly
200 205 210

Pro Ser Glu Tyr Pro Thr Lys Asn Tyr Val
215 220

<210> 331

<211> 1160

<212> DNA

<213> Homo sapiens

<400> 331

gccaaggaga acatcatcaa agacttctct agactcaaaa ggcttccacg 50
 ttctacatct tgagcatctt ctaccactcc gaattgaacc agtcttcaaa 100
 gtaaaggcaa tggcatttta tcccttgcaa attgctgggc tgggttcttg 150
 gttccttggc atgggtggga ctcttgccac aacccttctg cctcagtgg 200
 ggagtatcag cttttgttg cagcaacatt attgtcttg agaggctctg 250
 ggaagggctc tggatgaatt gcatccgaca agccagggtc cggttgcaat 300
 gcaagttcta tagctccttg ttggctctcc cgcctgccct ggaaacagcc 350
 cgggcectca tgtgtgtggc tgttgctctc tccttgatcg cctgcttat 400
 tggcatctgt ggcataagc aggtccagt cagaggctct aacgagagg 450
 ccaaagcata ccttctggga acttcaggag tcctcttcat cctgacgggt 500
 atcttcgttc tgattccggt gagctggaca gccaatataa tcatacagaga 550
 tttctacaac ccagccatcc acataggta gaaacgagag ctgggagcag 600
 cacttttctc tggctgggca agcgtctgt tcctcttcat tggaggggt 650
 ctgctttgtg gatcttgctg ctgcaacaga aagaagcaag ggtacagata 700
 tccagtgcct ggctaccgtg tgccacacac agataagcga agaaatacga 750
 caatgcttag taagacctcc accagttatg tctaatacct ccttttggct 800
 ccaagtatgg actatggtca atgtttttta taaagtcctg ctagaaactg 850
 taagtatgtg aggcaggaga acttgcttta tgtctagatt tacattgata 900
 cgaaagtttc aatttggtac tgggtggtagg aatgaaaatg acttacttgg 950
 acattctgac ttcagggtga ttaaatacat tgactattgt tggaccaaat 1000
 cgctgctcca attttcatat tctaaattca agtataacca taatcattag 1050
 caagtgtaca atgatggact acttattact ttttgacat catgtattat 1100
 ctgataagaa tctaaagttg aaattgatat tctataacaa taaaacatat 1150
 acctattcta 1160

<210> 332

<211> 173

<212> PRT

<213> Homo sapiens

<400> 332

Met Asn Cys Ile Arg Gln Ala Arg Val Arg Leu Gln Cys Lys Phe

| | | | |
|---------------------|---|-------------------------|-----|
| 1 | 5 | 10 | 15 |
| Tyr Ser Ser Leu | Leu Ala Leu Pro Pro | Ala Leu Glu Thr Ala Arg | |
| | 20 | 25 | 30 |
| Ala Leu Met Cys Val | Ala Val Ala Leu Ser Leu Ile Ala Leu Leu | | |
| | 35 | 40 | 45 |
| Ile Gly Ile Cys Gly | Met Lys Gln Val Gln Cys Thr Gly Ser Asn | | |
| | 50 | 55 | 60 |
| Glu Arg Ala Lys Ala | Tyr Leu Leu Gly Thr Ser Gly Val Leu Phe | | |
| | 65 | 70 | 75 |
| Ile Leu Thr Gly Ile | Phe Val Leu Ile Pro Val Ser Trp Thr Ala | | |
| | 80 | 85 | 90 |
| Asn Ile Ile Ile Arg | Asp Phe Tyr Asn Pro Ala Ile His Ile Gly | | |
| | 95 | 100 | 105 |
| Gln Lys Arg Glu Leu | Gly Ala Ala Leu Phe Leu Gly Trp Ala Ser | | |
| | 110 | 115 | 120 |
| Ala Ala Val Leu Phe | Ile Gly Gly Gly Leu Leu Cys Gly Phe Cys | | |
| | 125 | 130 | 135 |
| Cys Cys Asn Arg Lys | Lys Gln Gly Tyr Arg Tyr Pro Val Pro Gly | | |
| | 140 | 145 | 150 |
| Tyr Arg Val Pro His | Thr Asp Lys Arg Arg Asn Thr Thr Met Leu | | |
| | 155 | 160 | 165 |
| Ser Lys Thr Ser Thr | Ser Tyr Val | | |
| | 170 | | |

<210> 333
 <211> 535
 <212> DNA
 <213> Homo sapiens

<400> 333
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 atcactgggg gtctccttct gctctgtaca gtggtctatt tctgtagcag 100
 ctcagaagct gctagtctgt ctcaaaaaaa agtggactgc agcattttaca 150
 agaagtatcc agtgggtggcc atcccctgcc ccatcacata cctaccagtt 200
 tgtggttctg actacatcac ctatgggaat gaatgtcact tgtgtaccga 250
 gagcttgaaa agtaatggaa gagttcagtt tcttcacgat ggaagttgct 300
 aaattctcca tggacataga gagaaaggaa tgatattctc atcatcatct 350
 tcatcatccc aggctctgac tgagtttctt tcagttttac tgatgttctg 400
 ggtggggggac agagccagat tcagagtaat cttgactgaa tggagaaagt 450

ttctgtgcta cccctacaaa cccatgcctc actgacagac cagcattttt 500

tttttaacac gtcaataaaa aaataatctc ccaga 535

<210> 334

<211> 85

<212> PRT

<213> Homo sapiens

<400> 334

Met Lys Ile Thr Gly Gly Leu Leu Leu Leu Cys Thr Val Val Tyr
1 5 10 15

Phe Cys Ser Ser Ser Glu Ala Ala Ser Leu Ser Pro Lys Lys Val
20 25 30

Asp Cys Ser Ile Tyr Lys Lys Tyr Pro Val Val Ala Ile Pro Cys
35 40 45

Pro Ile Thr Tyr Leu Pro Val Cys Gly Ser Asp Tyr Ile Thr Tyr
50 55 60

Gly Asn Glu Cys His Leu Cys Thr Glu Ser Leu Lys Ser Asn Gly
65 70 75

Arg Val Gln Phe Leu His Asp Gly Ser Cys
80 85

<210> 335

<211> 742

<212> DNA

<213> Homo sapiens

<400> 335

cccgcgcccg gttctccctc gcagcacctc gaagtgcgcc cctcgccctc 50

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tggccctgac cgggctggcg ctgctcctgc tcctgtgctg gggcccaggt 150

ggcataagtg gaaataaact caagctgatg cttcaaaaac gagaagcacc 200

tggtccaact aagactaaag tggccgttga tgagaataaa gccaaagaat 250

tccttggcag cctgaagcgc cagaagcggc agctgtggga ccggactcgg 300

cccgaggtgc agcagtggta ccagcagttt ctctacatgg gctttgatga 350

agcgaaatth gaagatgaca tcacctattg gcttaacaga gatcgaaatg 400

gacatgaata ctatggcgat tactaccaac gtcactatga tgaagactct 450

gcaattggtc cccggagccc ctacggcttt aggcattggag ccagcgtcaa 500

ctacgatgac tactaaccat gacttgccac acgctgtaca agaagcaaat 550

agcgattctc ttcattgtatc tcctaattgcc ttacactact tggtttctga 600

tttgctctat ttcagcagat cttttctacc tactttgtgt gatcaaaaaa 650
gaagagttaa aacaacacat gtaaatgcct tttgatattt catgggaatg 700
cctctcattt aaaaatagaa ataaagcatt ttgttaaaaa ga 742

<210> 336

<211> 148

<212> PRT

<213> Homo sapiens

<400> 336

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Ser | Pro | Ala | Arg | Pro | Ala | Val | Leu | Ala | Leu | Thr | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Ala | Leu | Leu | Leu | Leu | Leu | Cys | Trp | Gly | Pro | Gly | Gly | Ile | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Asn | Lys | Leu | Lys | Leu | Met | Leu | Gln | Lys | Arg | Glu | Ala | Pro | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Thr | Lys | Thr | Lys | Val | Ala | Val | Asp | Glu | Asn | Lys | Ala | Lys | Glu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Phe | Leu | Gly | Ser | Leu | Lys | Arg | Gln | Lys | Arg | Gln | Leu | Trp | Asp | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Arg | Pro | Glu | Val | Gln | Gln | Trp | Tyr | Gln | Gln | Phe | Leu | Tyr | Met |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Phe | Asp | Glu | Ala | Lys | Phe | Glu | Asp | Asp | Ile | Thr | Tyr | Trp | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Asn | Arg | Asp | Arg | Asn | Gly | His | Glu | Tyr | Tyr | Gly | Asp | Tyr | Tyr | Gln |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Arg | His | Tyr | Asp | Glu | Asp | Ser | Ala | Ile | Gly | Pro | Arg | Ser | Pro | Tyr |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gly | Phe | Arg | His | Gly | Ala | Ser | Val | Asn | Tyr | Asp | Asp | Tyr | | |
| | | | | 140 | | | | | 145 | | | | | |

<210> 337

<211> 1310

<212> DNA

<213> Homo sapiens

<400> 337

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agccggggcgc tcggtagcgc ggcgggcaag gcaggcgcca tgaccctgat 100
tgaaggggtg ggtgatgagg tgaccgtcct tttctcgggtg cttgcctgcc 150
ttctggtgct ggcccttgcc tgggtctcaa cgcacaccgc tgagggcggg 200
gaccactgc ccagccgctc agggacccca acgccatccc agcccagcgc 250

agccatggca gctaccgaca gcatgagagg ggaggcccca ggggcagaga 300
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 cccacgacac cattggctcc ttgaaaagga cccagtttcc cggccgggaa 500
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 acgccaggtc ggtgggaggg tggatgaagg gagcggggag gggcagagga 1250
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 aaaaaaaaaa 1310

<210> 338
 <211> 246
 <212> PRT
 <213> Homo sapiens

<400> 338
 Met Thr Leu Ile Glu Gly Val Gly Asp Glu Val Thr Val Leu Phe
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 Ser Val Leu Ala Cys Leu Leu Val Leu Ala Leu Ala Trp Val Ser
 20 25 30
 Thr His Thr Ala Glu Gly Gly Asp Pro Leu Pro Gln Pro Ser Gly
 35 40 45

Thr Pro Thr Pro Ser Gln Pro Ser Ala Ala Met Ala Ala Thr Asp
50 55 60

Ser Met Arg Gly Glu Ala Pro Gly Ala Glu Thr Pro Ser Leu Arg
65 70 75

His Arg Gly Gln Ala Ala Gln Pro Glu Pro Ser Thr Gly Phe Thr
80 85 90

Ala Thr Pro Pro Ala Pro Asp Ser Pro Gln Glu Pro Leu Val Leu
95 100 105

Arg Leu Lys Phe Leu Asn Asp Ser Glu Gln Val Ala Arg Ala Trp
110 115 120

Pro His Asp Thr Ile Gly Ser Leu Lys Arg Thr Gln Phe Pro Gly
125 130 135

Arg Glu Gln Gln Val Arg Leu Ile Tyr Gln Gly Gln Leu Leu Gly
140 145 150

Asp Asp Thr Gln Thr Leu Gly Ser Leu His Leu Pro Pro Asn Cys
155 160 165

Val Leu His Cys His Val Ser Thr Arg Val Gly Pro Pro Asn Pro
170 175 180

Pro Cys Pro Pro Gly Ser Glu Pro Gly Pro Ser Gly Leu Glu Ile
185 190 195

Gly Ser Leu Leu Leu Pro Leu Leu Leu Leu Leu Leu Leu Leu
200 205 210

Trp Tyr Cys Gln Ile Gln Tyr Arg Pro Phe Phe Pro Leu Thr Ala
215 220 225

Thr Leu Gly Leu Ala Gly Phe Thr Leu Leu Leu Ser Leu Leu Ala
230 235 240

Phe Ala Met Tyr Arg Pro
245

<210> 339
<211> 849
<212> DNA
<213> Homo sapiens

<400> 339
gagattggaa acagccaggt tggagcagtg agtgagtaag gaaacctggc 50
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caagacccta agaaccatca gccctcagct gcacctctc cctccaagg 150
atgacaaagg cgctactcat ctatttggtc agcagctttc ttgccctaaa 200
tcaggccagc ctcacagtc gctgtgactt ggcccaggtg ctgcagctgg 250

140

145

<210> 341
 <211> 23
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-23
 <223> Synthetic construct.

 <400> 341
 ccctccaagg atgacaaagg cgc 23

 <210> 342
 <211> 29
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-29
 <223> Synthetic construct.

 <400> 342
 ggtcagcagc tttcttgccc taaatcagg 29

 <210> 343
 <211> 24
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

 <400> 343
 atctcaggcg gcatcctgtc agcc 24

 <210> 344
 <211> 24
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

 <400> 344
 gtggatgcct gcaagaaggt tggg 24

 <210> 345
 <211> 45
 <212> DNA
 <213> Artificial

332

<220>
 <221> Artificial Sequence
 <222> 1-45
 <223> Synthetic construct.

<400> 345
 agctttcttg ccctaaatca ggccagcctc atcagtcgct gtgac 45

<210> 346
 <211> 2575
 <212> DNA
 <213> Homo sapiens

<400> 346
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 actgagaacc caccagctca tcccagacac ctcatagcaa cctattttata 100
 caaaggggga aagaaacacc tgagcagaat ggaatcatta tttttttccc 150
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 gagaaaaaag ctctatgaaa gaatatagga agtttctcct tttcacacct 2550

| | | |
|-----------------|---------------------|-------------------------|
| Arg Ser Asn Lys | Arg Leu Gly Ala Ile | Arg Ala Arg Met Leu Gly |
| 260 | 265 | 270 |
| Ala Thr Arg Ala | Thr Gly Asp Val Leu | Val Phe Met Asp Ala His |
| 275 | 280 | 285 |
| Cys Glu Cys His | Pro Gly Trp Leu Glu | Pro Leu Leu Ser Arg Ile |
| 290 | 295 | 300 |
| Ala Gly Asp Arg | Ser Arg Val Val Ser | Pro Val Ile Asp Val Ile |
| 305 | 310 | 315 |
| Asp Trp Lys Thr | Phe Gln Tyr Tyr Pro | Ser Lys Asp Leu Gln Arg |
| 320 | 325 | 330 |
| Gly Val Leu Asp | Trp Lys Leu Asp Phe | His Trp Glu Pro Leu Pro |
| 335 | 340 | 345 |
| Glu His Val Arg | Lys Ala Leu Gln Ser | Pro Ile Ser Pro Ile Arg |
| 350 | 355 | 360 |
| Ser Pro Val Val | Pro Gly Glu Val Val | Ala Met Asp Arg His Tyr |
| 365 | 370 | 375 |
| Phe Gln Asn Thr | Gly Ala Tyr Asp Ser | Leu Met Ser Leu Arg Gly |
| 380 | 385 | 390 |
| Gly Glu Asn Leu | Glu Leu Ser Phe Lys | Ala Trp Leu Cys Gly Gly |
| 395 | 400 | 405 |
| Ser Val Glu Ile | Leu Pro Cys Ser Arg | Val Gly His Ile Tyr Gln |
| 410 | 415 | 420 |
| Asn Gln Asp Ser | His Ser Pro Leu Asp | Gln Glu Ala Thr Leu Arg |
| 425 | 430 | 435 |
| Asn Arg Val Arg | Ile Ala Glu Thr Trp | Leu Gly Ser Phe Lys Glu |
| 440 | 445 | 450 |
| Thr Phe Tyr Lys | His Ser Pro Glu Ala | Phe Ser Leu Ser Lys Ala |
| 455 | 460 | 465 |
| Glu Lys Pro Asp | Cys Met Glu Arg Leu | Gln Leu Gln Arg Arg Leu |
| 470 | 475 | 480 |
| Gly Cys Arg Thr | Phe His Trp Phe Leu | Ala Asn Val Tyr Pro Glu |
| 485 | 490 | 495 |
| Leu Tyr Pro Ser | Glu Pro Arg Pro Ser | Phe Ser Gly Lys Leu His |
| 500 | 505 | 510 |
| Asn Thr Gly Leu | Gly Leu Cys Ala Asp | Cys Gln Ala Glu Gly Asp |
| 515 | 520 | 525 |
| Ile Leu Gly Cys | Pro Met Val Leu Ala | Pro Cys Ser Asp Ser Arg |
| 530 | 535 | 540 |
| Gln Gln Gln Tyr | Leu Gln His Thr Ser | Arg Lys Glu Ile His Phe |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 545 | | 550 | | 555 |
| Gly Ser Pro Gln | His Leu Cys Phe Ala | Val Arg Gln Glu Gln | Val | | |
| | 560 | | 565 | | 570 |
| Ile Leu Gln Asn | Cys Thr Glu Glu Gly | Leu Ala Ile His Gln | Gln | | |
| | 575 | | 580 | | 585 |
| His Trp Asp Phe | Gln Glu Asn Gly Met | Ile Val His Ile Leu | Ser | | |
| | 590 | | 595 | | 600 |
| Gly Lys Cys Met | Glu Ala Val Val Gln | Glu Asn Asn Lys Asp | Leu | | |
| | 605 | | 610 | | 615 |
| Tyr Leu Arg Pro | Cys Asp Gly Lys Ala | Arg Gln Gln Trp Arg | Phe | | |
| | 620 | | 625 | | 630 |
| Asp Gln Ile Asn | Ala Val Asp Glu Arg | | | | |
| | 635 | | | | |

<210> 348
 <211> 23
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-23
 <223> Synthetic construct.

<400> 348
 ggagaggtgg tggccatgga cag 23

<210> 349
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 349
 ctgtcactgc aaggagccaa cacc 24

<210> 350
 <211> 45
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-45
 <223> Synthetic construct.

<400> 350
 tatgtcgtg cgaggtggtg aaaacctcga actgtctttc aaggc 45


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tcaaataaag cctttgcaag ataa 2524

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<210> 352
<211> 243
<212> PRT
<213> Homo sapiens

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<400> 352
Met Arg Pro Gln Gly Pro Ala Ala Ser Pro Gln Arg Leu Arg Gly
  1           5          10         15

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Leu Leu Leu Leu Leu Leu Leu Gln Leu Pro Ala Pro Ser Ser Ala
 20 25 30
 Ser Glu Ile Pro Lys Gly Lys Gln Lys Ala Gln Leu Arg Gln Arg
 35 40 45
 Glu Val Val Asp Leu Tyr Asn Gly Met Cys Leu Gln Gly Pro Ala
 50 55 60
 Gly Val Pro Gly Arg Asp Gly Ser Pro Gly Ala Asn Val Ile Pro
 65 70 75
 Gly Thr Pro Gly Ile Pro Gly Arg Asp Gly Phe Lys Gly Glu Lys
 80 85 90
 Gly Glu Cys Leu Arg Glu Ser Phe Glu Glu Ser Trp Thr Pro Asn
 95 100 105
 Tyr Lys Gln Cys Ser Trp Ser Ser Leu Asn Tyr Gly Ile Asp Leu
 110 115 120
 Gly Lys Ile Ala Glu Cys Thr Phe Thr Lys Met Arg Ser Asn Ser
 125 130 135
 Ala Leu Arg Val Leu Phe Ser Gly Ser Leu Arg Leu Lys Cys Arg
 140 145 150
 Asn Ala Cys Cys Gln Arg Trp Tyr Phe Thr Phe Asn Gly Ala Glu
 155 160 165
 Cys Ser Gly Pro Leu Pro Ile Glu Ala Ile Ile Tyr Leu Asp Gln
 170 175 180
 Gly Ser Pro Glu Met Asn Ser Thr Ile Asn Ile His Arg Thr Ser
 185 190 195
 Ser Val Glu Gly Leu Cys Glu Gly Ile Gly Ala Gly Leu Val Asp
 200 205 210
 Val Ala Ile Trp Val Gly Thr Cys Ser Asp Tyr Pro Lys Gly Asp
 215 220 225
 Ala Ser Thr Gly Trp Asn Ser Val Ser Arg Ile Ile Ile Glu Glu
 230 235 240

Leu Pro Lys

<210> 353
 <211> 480
 <212> DNA
 <213> Homo sapiens

<400> 353
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tccgggggttc tggccccctgc ggtgctcaca gacgatgttc cacaggagcc 150
 cgtgcccacg ctgtggaacg agccggccga gctgccgtcg ggagaaggcc 200
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 gccccaccg tcgcgccagg acccgaggac agcaccgcgc aggagcggct 300
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 tcgcgcacct gctggccacc tgcgtggtgc tggcgctcgt ggtcgtcgcg 400
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 gcggcgcgac tcggcaaaaa aaaaaaaaaa 480

<210> 354
 <211> 121
 <212> PRT
 <213> Homo sapiens

<400> 354
 Met Ala Ser Cys Leu Ala Leu Arg Met Ala Leu Leu Leu Val Ser
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 Gly Val Leu Ala Pro Ala Val Leu Thr Asp Asp Val Pro Gln Glu
 20 25 30
 Pro Val Pro Thr Leu Trp Asn Glu Pro Ala Glu Leu Pro Ser Gly
 35 40 45
 Glu Gly Pro Val Glu Ser Thr Ser Pro Gly Arg Glu Pro Val Asp
 50 55 60
 Thr Gly Pro Pro Ala Pro Thr Val Ala Pro Gly Pro Glu Asp Ser
 65 70 75
 Thr Ala Gln Glu Arg Leu Asp Gln Gly Gly Gly Ser Leu Gly Pro
 80 85 90
 Gly Ala Ile Ala Ala Ile Val Ile Ala Ala Leu Leu Ala Thr Cys
 95 100 105
 Val Val Leu Ala Leu Val Val Val Ala Leu Arg Lys Phe Ser Ala
 110 115 120

Ser

<210> 355
 <211> 2134
 <212> DNA
 <213> Homo sapiens

<400> 355
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gtgcctgacg gcggcgctgg cccacggctg tctgcaactgc cacagcaact 150
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tggggtggcg acatccccgt gtcaggggcg ctgctcaccg actggagcga 250
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taccagggga agatgtactt ccccggtat ttcccaacg agctgcgaaa 400
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 ctgcgggatg tgattaaagt cctgatgtt tctc 2134

<210> 356
 <211> 157
 <212> PRT
 <213> Homo sapiens

<400> 356
 Met Ala Leu Leu Leu Cys Leu Val Cys Leu Thr Ala Ala Leu Ala
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 His Gly Cys Leu His Cys His Ser Asn Phe Ser Lys Lys Phe Ser
 20 25 30
 Phe Tyr Arg His His Val Asn Phe Lys Ser Trp Trp Val Gly Asp
 35 40 45
 Ile Pro Val Ser Gly Ala Leu Leu Thr Asp Trp Ser Asp Asp Thr
 50 55 60
 Met Lys Glu Leu His Leu Ala Ile Pro Ala Lys Ile Thr Arg Glu
 65 70 75
 Lys Leu Asp Gln Val Ala Thr Ala Val Tyr Gln Met Met Asp Gln
 80 85 90
 Leu Tyr Gln Gly Lys Met Tyr Phe Pro Gly Tyr Phe Pro Asn Glu
 95 100 105
 Leu Arg Asn Ile Phe Arg Glu Gln Val His Leu Ile Gln Asn Ala
 110 115 120
 Ile Ile Glu Arg His Leu Ala Pro Gly Ser Trp Gly Gly Gly Gln
 125 130 135
 Leu Ser Arg Glu Gly Pro Ser Leu Ala Pro Glu Gly Ser Met Pro

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Leu | Val | Asp | Ser | Gly | Met | Lys | Glu | Asn | Gly | Lys | Val | Ile | Ser |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Phe | Phe | Lys | Leu | Lys | Glu | Ser | Gln | Leu | Pro | Ala | Leu | Ala | Ile | Tyr |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Gln | Thr | Leu | Asp | Asp | Glu | Trp | Asp | Thr | Leu | Pro | Thr | Ala | Glu | Val |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ser | Val | Glu | His | Val | Gln | Asn | Phe | Cys | Asp | Gly | Phe | Leu | Ser | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Lys | Leu | Leu | Lys | Glu | Asn | Arg | Glu | Ser | Glu | Gly | Lys | Thr | Pro | Lys |
| | | | | 260 | | | | | 265 | | | | | 270 |

Val Glu Leu

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 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 359
 ccagcagtgcc ccatactcca tagc 24

<210> 360
 <211> 20
 <212> DNA
 <213> Artificial

<220>
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 <223> Synthetic construct.

<400> 360
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<210> 361
 <211> 24
 <212> DNA
 <213> Artificial

<220>
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 <223> Synthetic construct.

<400> 361
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<210> 362

<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 362
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<210> 363
<211> 1777
<212> DNA
<213> Homo sapiens

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agtggctgga cgatggcagc gtccgccgga gccggggcgg tgattgcagc 200
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tgcggatatc cgaaagaatt aagagaatac ctagaacata tcctcagcaa 1000

| | | | | | |
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| atgtagcctt | ggagacccag | gcaaggacaa | gtacacgtgt | actcacagag | 1100 |
| ggagagaaaag | atgtgtacaa | aggatatgta | taaatattct | atttagtcat | 1150 |
| cctgatatga | ggagccagtg | ttgcatgatg | aaaagatggg | atgattctac | 1200 |
| atatgtaccc | attgtcttgc | tgtttttgta | ctttcttttc | aggtcattta | 1250 |
| caattggggag | atttcagaaa | cattcctttc | accatcattt | agaaatgggt | 1300 |
| tgccttaatg | gagacaatag | cagatcctgt | agtattttcca | gtagacatgg | 1350 |
| ccttttaatc | taagggctta | agactgatta | gtcttagcat | ttactgtagt | 1400 |
| tggaggatgg | agatgctatg | atggaagcat | acccagggtg | gccttttagca | 1450 |
| cagtatcagt | accatttatt | tgtctgccgc | ttttaaaaaa | taccatttgg | 1500 |
| ctatgccact | tgaaaacaat | ttgagaagtt | tttttgaagt | ttttctcact | 1550 |
| aaaatatggg | gcaattgtta | gccttacatg | ttgtgtagac | ttacttttaag | 1600 |
| tttgcaccct | tgaaatgtgt | catatcaatt | tctggattca | taatagcaag | 1650 |
| attagcaaag | gataaatgcc | gaaggtcact | tcattctgga | cacagttgga | 1700 |
| tcaatactga | ttaagtagaa | aatccaagct | ttgcttgaga | actttttgtaa | 1750 |
| cgtggagagt | aaaaagtatc | ggtttta | 1777 | | |

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<211> 269
<212> PRT
<213> Homo sapiens
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              20              25              30

Leu  Thr  Ala  Gly  Val  Ser  Ala  Leu  Glu  Val  Tyr  Thr  Pro  Lys  Glu
              35              40              45

Ile  Phe  Val  Ala  Asn  Gly  Thr  Gln  Gly  Lys  Leu  Thr  Cys  Lys  Phe
              50              55              60

Lys  Ser  Thr  Ser  Thr  Thr  Gly  Gly  Leu  Thr  Ser  Val  Ser  Trp  Ser
              65              70              75

Phe  Gln  Pro  Glu  Gly  Ala  Asp  Thr  Thr  Val  Ser  Phe  Phe  His  Tyr
              80              85              90

Ser  Gln  Gly  Gln  Val  Tyr  Leu  Gly  Asn  Tyr  Pro  Pro  Phe  Lys  Asp
              95              100             105

```

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ile | Ser | Trp | Ala | Gly | Asp | Leu | Asp | Lys | Lys | Asp | Ala | Ser | Ile |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asn | Ile | Glu | Asn | Met | Gln | Phe | Ile | His | Asn | Gly | Thr | Tyr | Ile | Cys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Asp | Val | Lys | Asn | Pro | Pro | Asp | Ile | Val | Val | Gln | Pro | Gly | His | Ile |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Arg | Leu | Tyr | Val | Val | Glu | Lys | Glu | Asn | Leu | Pro | Val | Phe | Pro | Val |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Trp | Val | Val | Val | Gly | Ile | Val | Thr | Ala | Val | Val | Leu | Gly | Leu | Thr |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Leu | Ile | Ser | Met | Ile | Leu | Ala | Val | Leu | Tyr | Arg | Arg | Lys | Asn |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ser | Lys | Arg | Asp | Tyr | Thr | Gly | Cys | Ser | Thr | Ser | Glu | Ser | Leu | Ser |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Pro | Val | Lys | Gln | Ala | Pro | Arg | Lys | Ser | Pro | Ser | Asp | Thr | Glu | Gly |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Val | Lys | Ser | Leu | Pro | Ser | Gly | Ser | His | Gln | Gly | Pro | Val | Ile |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Tyr | Ala | Gln | Leu | Asp | His | Ser | Gly | Gly | His | His | Ser | Asp | Lys | Ile |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asn | Lys | Ser | Glu | Ser | Val | Val | Tyr | Ala | Asp | Ile | Arg | Lys | Asn | |
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 <212> DNA
 <213> Homo sapiens

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 ccacagcgc gccgggctgc cgcctctcgg ccacggctgg gtcggggggcc 150
 tcgggctggg gctggggctg gcgctcgggg tgaagctggc aggtgggctg 200
 aggggcgcg ccccggcgca gtcccccgcg gcccccgacc ctgaggcgctc 250
 gcctctggcc gagccgccac aggagcagtc cctcgccccg tggctctccgc 300
 agaccccggc gccgcctgc tccaggtgct tcgccagagc catcgagagc 350
 agccgcgacc tgctgcacag gatcaaggat gaggtggggc caccgggcat 400
 agtggttggg gtttctgtag atggaaaaga agtctggtca gaaggtttag 450
 gttatgctga tgttgagaac cgtgtaccat gtaaaccaga gacagttatg 500

cgaattgcta gcatcagcaa aagtctcacc atggttgctc ttgccaaatt 550
 gtgggaagca gggaaactgg atcttgatat tccagtacaa cattatgttc 600
 ccgaattccc agaaaaagaa tatgaagggtg aaaagggttc tgtcacaaca 650
 agattactga tttcccatTT aagtggaatt cgtcattatg aaaaggacat 700
 aaaaaagggtg aaagaagaga aagcttataa agccttgaag atgatgaaag 750
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 tggactatat gcagaaaata ttccatgact tggatatgct gacgactgtg 1100
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 cttctgctgt gtctagctat atcgcatctt aacactatTT tattaattaa 1200
 aagtcaaatt ttctttgttt ccattccaaa atcaacctgc cacattttgg 1250
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 catgtttata aagtaaaaaa a 1321

<210> 366
 <211> 373
 <212> PRT
 <213> Homo sapiens

<400> 366
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 Gly Gly Leu Ala Ser Ser Cys Gly Arg Arg Gly Val His Gln Arg
 20 25 30
 Ala Gly Leu Pro Pro Leu Gly His Gly Trp Val Gly Gly Leu Gly
 35 40 45
 Leu Gly Leu Gly Leu Ala Leu Gly Val Lys Leu Ala Gly Gly Leu
 50 55 60
 Arg Gly Ala Ala Pro Ala Gln Ser Pro Ala Ala Pro Asp Pro Glu
 65 70 75
 Ala Ser Pro Leu Ala Glu Pro Pro Gln Glu Gln Ser Leu Ala Pro
 80 85 90

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Trp | Ser | Pro | Gln | Thr | Pro | Ala | Pro | Pro | Cys | Ser | Arg | Cys | Phe | Ala | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Arg | Ala | Ile | Glu | Ser | Ser | Arg | Asp | Leu | Leu | His | Arg | Ile | Lys | Asp | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Glu | Val | Gly | Ala | Pro | Gly | Ile | Val | Val | Gly | Val | Ser | Val | Asp | Gly | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Lys | Glu | Val | Trp | Ser | Glu | Gly | Leu | Gly | Tyr | Ala | Asp | Val | Glu | Asn | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Arg | Val | Pro | Cys | Lys | Pro | Glu | Thr | Val | Met | Arg | Ile | Ala | Ser | Ile | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ser | Lys | Ser | Leu | Thr | Met | Val | Ala | Leu | Ala | Lys | Leu | Trp | Glu | Ala | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gly | Lys | Leu | Asp | Leu | Asp | Ile | Pro | Val | Gln | His | Tyr | Val | Pro | Glu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Phe | Pro | Glu | Lys | Glu | Tyr | Glu | Gly | Glu | Lys | Val | Ser | Val | Thr | Thr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Arg | Leu | Leu | Ile | Ser | His | Leu | Ser | Gly | Ile | Arg | His | Tyr | Glu | Lys | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Asp | Ile | Lys | Lys | Val | Lys | Glu | Glu | Lys | Ala | Tyr | Lys | Ala | Leu | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Met | Met | Lys | Glu | Asn | Val | Ala | Phe | Glu | Gln | Glu | Lys | Glu | Gly | Lys | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ser | Asn | Glu | Lys | Asn | Asp | Phe | Thr | Lys | Phe | Lys | Thr | Glu | Gln | Glu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Asn | Glu | Ala | Lys | Cys | Arg | Asn | Ser | Lys | Pro | Gly | Lys | Lys | Lys | Asn | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Asp | Phe | Glu | Gln | Gly | Glu | Leu | Tyr | Leu | Arg | Glu | Lys | Phe | Glu | Asn | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ser | Ile | Glu | Ser | Leu | Arg | Leu | Phe | Lys | Asn | Asp | Pro | Leu | Phe | Phe | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Lys | Pro | Gly | Ser | Gln | Phe | Leu | Tyr | Ser | Thr | Phe | Gly | Tyr | Thr | Leu | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Leu | Ala | Ala | Ile | Val | Glu | Arg | Ala | Ser | Gly | Cys | Lys | Tyr | Leu | Asp | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Tyr | Met | Gln | Lys | Ile | Phe | His | Asp | Leu | Asp | Met | Leu | Thr | Thr | Val | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Gln | Glu | Glu | Asn | Glu | Pro | Val | Ile | Tyr | Asn | Arg | Ala | Arg | | | |
| | | | | 365 | | | | | 370 | | | | | | |

<210> 367

<210> 372

<211> 269

<212> PRT

<213> Homo sapiens

<400> 372

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Ala | Ser | Ala | Gly | Ala | Thr | Arg | Leu | Leu | Leu | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Met | Ala | Val | Ala | Ala | Pro | Ser | Arg | Ala | Arg | Gly | Ser | Gly | Cys |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ala | Gly | Thr | Gly | Ala | Arg | Gly | Ala | Gly | Ala | Glu | Gly | Arg | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Glu | Ala | Cys | Gly | Thr | Val | Gly | Leu | Leu | Leu | Glu | His | Ser | Phe |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Glu | Ile | Asp | Asp | Ser | Ala | Asn | Phe | Arg | Lys | Arg | Gly | Ser | Leu | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Trp | Asn | Gln | Gln | Asp | Gly | Thr | Leu | Ser | Leu | Ser | Gln | Arg | Gln | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Glu | Glu | Glu | Arg | Gly | Arg | Leu | Arg | Asp | Val | Ala | Ala | Leu | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Leu | Tyr | Arg | Val | Arg | Ile | Pro | Arg | Arg | Pro | Gly | Ala | Leu | Asp |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Leu | Glu | Ala | Gly | Gly | Tyr | Val | Ser | Ser | Phe | Val | Pro | Ala | Cys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | Leu | Val | Glu | Ser | His | Leu | Ser | Asp | Gln | Leu | Thr | Leu | His | Val |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Asp | Val | Ala | Gly | Asn | Val | Val | Gly | Val | Ser | Val | Val | Thr | His | Pro |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gly | Gly | Cys | Arg | Gly | His | Glu | Val | Glu | Asp | Val | Asp | Leu | Glu | Leu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Phe | Asn | Thr | Ser | Val | Gln | Leu | Gln | Pro | Pro | Thr | Thr | Ala | Pro | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Pro | Glu | Thr | Ala | Ala | Phe | Ile | Glu | Arg | Leu | Glu | Met | Glu | Gln | Ala |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gln | Lys | Ala | Lys | Asn | Pro | Gln | Glu | Gln | Lys | Ser | Phe | Phe | Ala | Lys |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Tyr | Trp | Met | Tyr | Ile | Ile | Pro | Val | Val | Leu | Phe | Leu | Met | Met | Ser |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Gly | Ala | Pro | Asp | Thr | Gly | Gly | Gln | Gly | Gly | Gly | Gly | Gly | Gly | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Gly | Gly | Gly | Gly | Ser | Gly | Leu | Cys | Cys | Val | Pro | Pro | Ser | Leu | |
| | | | | 260 | | | | | 265 | | | | | |

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 <211> 1706
 <212> DNA
 <213> Homo sapiens

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gactgacttt gtgactgtcc tgtggtttct cctgccattg ctttgtgttt 1600
gggaggacat gatgggggtg atggactgga aagaagggtc caaaagttcc 1650

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aaaaaa 1706

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<211> 450
<212> PRT
<213> Homo sapiens

<400> 374
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Arg Ala Cys Ser Asn Pro Ser Phe Leu Arg Phe Gln Leu Asp Phe
35 40 45
Tyr Gln Val Tyr Phe Leu Ala Leu Ala Ala Asp Trp Leu Gln Ala
50 55 60
Pro Tyr Leu Tyr Lys Leu Tyr Gln His Tyr Tyr Phe Leu Glu Gly
65 70 75
Gln Ile Ala Ile Leu Tyr Val Cys Gly Leu Ala Ser Thr Val Leu
80 85 90
Phe Gly Leu Val Ala Ser Ser Leu Val Asp Trp Leu Gly Arg Lys
95 100 105
Asn Ser Cys Val Leu Phe Ser Leu Thr Tyr Ser Leu Cys Cys Leu
110 115 120
Thr Lys Leu Ser Gln Asp Tyr Phe Val Leu Leu Val Gly Arg Ala
125 130 135
Leu Gly Gly Leu Ser Thr Ala Leu Leu Phe Ser Ala Phe Glu Ala
140 145 150
Trp Tyr Ile His Glu His Val Glu Arg His Asp Phe Pro Ala Glu
155 160 165
Trp Ile Pro Ala Thr Phe Ala Arg Ala Ala Phe Trp Asn His Val
170 175 180
Leu Ala Val Val Ala Gly Val Ala Ala Glu Ala Val Ala Ser Trp
185 190 195
Ile Gly Leu Gly Pro Val Ala Pro Phe Val Ala Ala Ile Pro Leu
200 205 210
Leu Ala Leu Ala Gly Ala Leu Ala Leu Arg Asn Trp Gly Glu Asn
215 220 225
Tyr Asp Arg Gln Arg Ala Phe Ser Arg Thr Cys Ala Gly Gly Leu
230 235 240

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Arg | Cys | Leu | Leu | Ser | Asp | Arg | Arg | Val | Leu | Leu | Leu | Gly | Thr | Ile | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gln | Ala | Leu | Phe | Glu | Ser | Val | Ile | Phe | Ile | Phe | Val | Phe | Leu | Trp | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Thr | Pro | Val | Leu | Asp | Pro | His | Gly | Ala | Pro | Leu | Gly | Ile | Ile | Phe | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ser | Ser | Phe | Met | Ala | Ala | Ser | Leu | Leu | Gly | Ser | Ser | Leu | Tyr | Arg | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ile | Ala | Thr | Ser | Lys | Arg | Tyr | His | Leu | Gln | Pro | Met | His | Leu | Leu | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Ser | Leu | Ala | Val | Leu | Ile | Val | Val | Phe | Ser | Leu | Phe | Met | Leu | Thr | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Phe | Ser | Thr | Ser | Pro | Gly | Gln | Glu | Ser | Pro | Val | Glu | Ser | Phe | Ile | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Ala | Phe | Leu | Leu | Ile | Glu | Leu | Ala | Cys | Gly | Leu | Tyr | Phe | Pro | Ser | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Met | Ser | Phe | Leu | Arg | Arg | Lys | Val | Ile | Pro | Glu | Thr | Glu | Gln | Ala | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Gly | Val | Leu | Asn | Trp | Phe | Arg | Val | Pro | Leu | His | Ser | Leu | Ala | Cys | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Leu | Gly | Leu | Leu | Val | Leu | His | Asp | Ser | Asp | Arg | Lys | Thr | Gly | Thr | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Arg | Asn | Met | Phe | Ser | Ile | Cys | Ser | Ala | Val | Met | Val | Met | Ala | Leu | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Leu | Ala | Val | Val | Gly | Leu | Phe | Thr | Val | Val | Arg | His | Asp | Ala | Glu | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Leu | Arg | Val | Pro | Ser | Pro | Thr | Glu | Glu | Pro | Tyr | Ala | Pro | Glu | Leu | |
| | | | | 440 | | | | | 445 | | | | | 450 | |

<210> 375
 <211> 1098
 <212> DNA
 <213> Artificial

<400> 375
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 gctccccgcg tgcgtcgcg cccacggctt ccgtatccat gattatttgt 150
 actttcaagt gctgagtcct ggggacattc gatacatctt cacagccaca 200
 cctgccaaagg actttggtgg tatctttcac acaaggtatg agcagattca 250

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ccttgtcccc gctgaacctc cagaggcctg cggggaactc agcaacggtt 300
tcttcatcca ggaccagatt gctctggtgg agaggggggg ctgctccttc 350
ctctccaaga ctcggttggt ccaggagcac ggcgggcggg cggatgatcat 400
ctctgacaac gcagttgaca atgacagctt ctacgtggag atgatccagg 450
acagtacca gcgcacagct gacatccccg ccctcttcct gctcggccga 500
gacggctaca tgatccgccg ctctctggaa cagcatgggc tgccatgggc 550
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ataagtgact ctgagctggg aaggggaaac ccaggaattt tgctacttgg 700
aatttgaga tagcatctgg ggacaagtgg agccaggtag aggaaaagg 750
tttgggcgtt gctaggctga aagggagcc acaccactgg cttcccttc 800
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<210> 376
 <211> 188
 <212> PRT
 <213> Homo sapiens

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<400> 376
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          20          25          30
Tyr Phe Gln Val Leu Ser Pro Gly Asp Ile Arg Tyr Ile Phe Thr
          35          40          45
Ala Thr Pro Ala Lys Asp Phe Gly Gly Ile Phe His Thr Arg Tyr
          50          55          60
Glu Gln Ile His Leu Val Pro Ala Glu Pro Pro Glu Ala Cys Gly
          65          70          75
Glu Leu Ser Asn Gly Phe Phe Ile Gln Asp Gln Ile Ala Leu Val
          80          85          90

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Met Glu Leu Ala Leu Leu Cys Gly Leu Val Val Met Ala Gly Val
1 5 10 15
Ile Pro Ile Gln Gly Gly Ile Leu Asn Leu Asn Lys Met Val Lys
20 25 30
Gln Val Thr Gly Lys Met Pro Ile Leu Ser Tyr Trp Pro Tyr Gly
35 40 45
Cys His Cys Gly Leu Gly Gly Arg Gly Gln Pro Lys Asp Ala Thr
50 55 60
Asp Trp Cys Cys Gln Thr His Asp Cys Cys Tyr Asp His Leu Lys
65 70 75
Thr Gln Gly Cys Gly Ile Tyr Lys Asp Asn Asn Lys Ser Ser Ile
80 85 90
His Cys Met Asp Leu Ser Gln Arg Tyr Cys Leu Met Ala Val Phe
95 100 105
Asn Val Ile Tyr Leu Glu Asn Glu Asp Ser Glu
110 115

<210> 379
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 379
ctgcctccac tgctctgtgc tggg 24

<210> 380
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 380
cagagcagtg gatgttcccc tggg 24

<210> 381
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45

Gly Leu Arg Val Ser Val Gly Leu Leu Leu Val Lys Ser Val Gln
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Val Lys Leu Gly Asp Ser Trp Asp Val Lys Leu Gly Ala Leu Gly
65 70 75
Gly Asn Thr Gln Glu Val Thr Leu Gln Pro Gly Glu Tyr Ile Thr
80 85 90
Lys Val Phe Val Ala Phe Gln Ala Phe Leu Arg Gly Met Val Met
95 100 105
Tyr Thr Ser Lys Asp Arg Tyr Phe Tyr Phe Gly Lys Leu Asp Gly
110 115 120
Gln Ile Ser Ser Ala Tyr Pro Ser Gln Glu Gly Gln Val Leu Val
125 130 135
Gly Ile Tyr Gly Gln Tyr Gln Leu Leu Gly Ile Lys Ser Ile Gly
140 145 150
Phe Glu Trp Asn Tyr Pro Leu Glu Glu Pro Thr Thr Glu Pro Pro
155 160 165
Val Asn Leu Thr Tyr Ser Ala Asn Ser Pro Val Gly Arg
170 175

<210> 384
<211> 2379
<212> DNA
<213> Homo sapiens

<400> 384
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atacagatgt ggcagctcag gtagcccaa attgcctgga agaatacatc 150
atgttttttcg ataagaagaa attgtaggat ccagtttttt ttttaaccgc 200
cccctcccca ccccccaaaa aaactgtaaa gatgcaaaaa cgtaatatcc 250
atgaagatcc tattacctag gaagattttg atgttttgct gcgaatgcgg 300
tgttgggatt tatttgttct tggagtgttc tgcgtggctg gcaaagaata 350
atgttccaaa atcgggtccat ctcccaaggg gtccaatttt tcttcctggg 400
tgtcagcgag ccctgactca ctacagtgca gctgacaggg gctgtcatgc 450
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acaaaggatg ggtttcaatg taattaggct actgagcgga tcagctgtag 550
cactggttat agccccact gtcttactga caatgctttc ttctgccgaa 600
cgaggatgcc ctaagggtg taggtgtgaa ggcaaatgg tatattgtga 650

atctcagaaa ttacaggaga taccctcaag tatatctgct ggttgcttag 700
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tcataatact ggtcattttc ctctcataca taatcaaccc attgaaatct 2250
aaataccaca atcaatgtga agcttgaact ccggtttaat ataataccta 2300
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aaaacttctt tcataggtaa aaaaaaaaaa 2379

<210> 385
<211> 513
<212> PRT
<213> Homo sapiens

<400> 385
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Glu Arg Gly Cys Pro Lys Gly Cys Arg Cys Glu Gly Lys Met Val
35 40 45
Tyr Cys Glu Ser Gln Lys Leu Gln Glu Ile Pro Ser Ser Ile Ser
50 55 60
Ala Gly Cys Leu Gly Leu Ser Leu Arg Tyr Asn Ser Leu Gln Lys
65 70 75
Leu Lys Tyr Asn Gln Phe Lys Gly Leu Asn Gln Leu Thr Trp Leu
80 85 90
Tyr Leu Asp His Asn His Ile Ser Asn Ile Asp Glu Asn Ala Phe
95 100 105
Asn Gly Ile Arg Arg Leu Lys Glu Leu Ile Leu Ser Ser Asn Arg
110 115 120
Ile Ser Tyr Phe Leu Asn Asn Thr Phe Arg Pro Val Thr Asn Leu
125 130 135
Arg Asn Leu Asp Leu Ser Tyr Asn Gln Leu His Ser Leu Gly Ser
140 145 150
Glu Gln Phe Arg Gly Leu Arg Lys Leu Leu Ser Leu His Leu Arg
155 160 165
Ser Asn Ser Leu Arg Thr Ile Pro Val Arg Ile Phe Gln Asp Cys
170 175 180
Arg Asn Leu Glu Leu Leu Asp Leu Gly Tyr Asn Arg Ile Arg Ser
185 190 195
Leu Ala Arg Asn Val Phe Ala Gly Met Ile Arg Leu Lys Glu Leu

| 200 | | | | | 205 | | | | | 210 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Leu | Glu | His | Asn | Gln | Phe | Ser | Lys | Leu | Asn | Leu | Ala | Leu | Phe |
| | | | | 215 | | | | | | | | | | 225 |
| Pro | Arg | Leu | Val | Ser | Leu | Gln | Asn | Leu | Tyr | Leu | Gln | Trp | Asn | Lys |
| | | | | 230 | | | | | | | | | | 240 |
| Ile | Ser | Val | Ile | Gly | Gln | Thr | Met | Ser | Trp | Thr | Trp | Ser | Ser | Leu |
| | | | | 245 | | | | | | | | | | 255 |
| Gln | Arg | Leu | Asp | Leu | Ser | Gly | Asn | Glu | Ile | Glu | Ala | Phe | Ser | Gly |
| | | | | 260 | | | | | | | | | | 270 |
| Pro | Ser | Val | Phe | Gln | Cys | Val | Pro | Asn | Leu | Gln | Arg | Leu | Asn | Leu |
| | | | | 275 | | | | | | | | | | 285 |
| Asp | Ser | Asn | Lys | Leu | Thr | Phe | Ile | Gly | Gln | Glu | Ile | Leu | Asp | Ser |
| | | | | 290 | | | | | | | | | | 300 |
| Trp | Ile | Ser | Leu | Asn | Asp | Ile | Ser | Leu | Ala | Gly | Asn | Ile | Trp | Glu |
| | | | | 305 | | | | | | | | | | 315 |
| Cys | Ser | Arg | Asn | Ile | Cys | Ser | Leu | Val | Asn | Trp | Leu | Lys | Ser | Phe |
| | | | | 320 | | | | | | | | | | 330 |
| Lys | Gly | Leu | Arg | Glu | Asn | Thr | Ile | Ile | Cys | Ala | Ser | Pro | Lys | Glu |
| | | | | 335 | | | | | | | | | | 345 |
| Leu | Gln | Gly | Val | Asn | Val | Ile | Asp | Ala | Val | Lys | Asn | Tyr | Ser | Ile |
| | | | | 350 | | | | | | | | | | 360 |
| Cys | Gly | Lys | Ser | Thr | Thr | Glu | Arg | Phe | Asp | Leu | Ala | Arg | Ala | Leu |
| | | | | 365 | | | | | | | | | | 375 |
| Pro | Lys | Pro | Thr | Phe | Lys | Pro | Lys | Leu | Pro | Arg | Pro | Lys | His | Glu |
| | | | | 380 | | | | | | | | | | 390 |
| Ser | Lys | Pro | Pro | Leu | Pro | Pro | Thr | Val | Gly | Ala | Thr | Glu | Pro | Gly |
| | | | | 395 | | | | | | | | | | 405 |
| Pro | Glu | Thr | Asp | Ala | Asp | Ala | Glu | His | Ile | Ser | Phe | His | Lys | Ile |
| | | | | 410 | | | | | | | | | | 420 |
| Ile | Ala | Gly | Ser | Val | Ala | Leu | Phe | Leu | Ser | Val | Leu | Val | Ile | Leu |
| | | | | 425 | | | | | | | | | | 435 |
| Leu | Val | Ile | Tyr | Val | Ser | Trp | Lys | Arg | Tyr | Pro | Ala | Ser | Met | Lys |
| | | | | 440 | | | | | | | | | | 450 |
| Gln | Leu | Gln | Gln | Arg | Ser | Leu | Met | Arg | Arg | His | Arg | Lys | Lys | Lys |
| | | | | 455 | | | | | | | | | | 465 |
| Arg | Gln | Ser | Leu | Lys | Gln | Met | Thr | Pro | Ser | Thr | Gln | Glu | Phe | Tyr |
| | | | | 470 | | | | | | | | | | 480 |
| Val | Asp | Tyr | Lys | Pro | Thr | Asn | Thr | Glu | Thr | Ser | Glu | Met | Leu | Leu |
| | | | | 485 | | | | | | | | | | 495 |

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<210> 390

<211> 146

<212> PRT

<213> Homo sapiens

<400> 390

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Arg | Ser | Arg | Leu | Phe | Ser | Val | Thr | Ser | Ala | Ile | Ser | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

Ile Gly Ile Leu Cys Leu Pro Leu Phe Gln Leu Val Leu Ser Asp
 20 25 30
 Leu Pro Cys Glu Glu Asp Glu Met Cys Val Asn Tyr Asn Asp Gln
 35 40 45
 His Pro Asn Gly Trp Tyr Ile Trp Ile Leu Leu Leu Val Leu
 50 55 60
 Val Ala Ala Leu Leu Cys Gly Ala Val Val Leu Cys Leu Gln Cys
 65 70 75
 Trp Leu Arg Arg Pro Arg Ile Asp Ser His Arg Arg Thr Met Ala
 80 85 90
 Val Phe Ala Val Gly Asp Leu Asp Ser Ile Tyr Gly Thr Glu Ala
 95 100 105
 Ala Val Ser Pro Thr Val Gly Ile His Leu Gln Thr Gln Thr Pro
 110 115 120
 Asp Leu Tyr Pro Val Pro Ala Pro Cys Phe Gly Pro Leu Gly Ser
 125 130 135
 Pro Pro Pro Tyr Glu Glu Ile Val Lys Thr Thr
 140 145

<210> 391
 <211> 26
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-26
 <223> Synthetic construct.

<400> 391
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<210> 392
 <211> 23
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-23
 <223> Synthetic construct.

<400> 392
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<210> 393
 <211> 47
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-47
 <223> Synthetic construct.

<400> 393
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<210> 394
 <211> 2340
 <212> DNA
 <213> Homo sapiens

<400> 394
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 aatgctgtac tatgtcctta aagagaattt ggtaacttgg ttgatgtggg 1100

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tatttattct ctatagtaac tgcttaagt cagctagctt ctagatttag 2150
actatataga atttagatat tgtattgttc gtcattataa tatgctacca 2200
catgtagcaa taattacaat attttattaa aataaatatg tgaaatattg 2250
tttcatgaaa gacagatttc caaatctctc ttctcttctc tgtactgtct 2300
acctttatgt gaagaaatta atttatgccc attgccaggt 2340

<210> 395

<211> 140

<212> PRT

<213> Homo sapiens

<400> 395

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Phe | Thr | Ile | Ser | Arg | Lys | Asn | Met | Ser | Gln | Lys | Leu | Ser |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

Leu Leu Leu Leu Val Phe Gly Leu Ile Trp Gly Leu Met Leu Leu
20 25 30
His Tyr Thr Phe Gln Gln Pro Arg His Gln Ser Ser Val Lys Leu
35 40 45
Arg Glu Gln Ile Leu Asp Leu Ser Lys Arg Tyr Val Lys Ala Leu
50 55 60
Ala Glu Glu Asn Lys Asn Thr Val Asp Val Glu Asn Gly Ala Ser
65 70 75
Met Ala Gly Tyr Ala Asp Leu Lys Arg Thr Ile Ala Val Leu Leu
80 85 90
Asp Asp Ile Leu Gln Arg Leu Val Lys Leu Glu Asn Lys Val Asp
95 100 105
Tyr Ile Val Val Asn Gly Ser Ala Ala Asn Thr Thr Asn Gly Thr
110 115 120
Ser Gly Asn Leu Val Pro Val Thr Thr Asn Lys Arg Thr Asn Val
125 130 135
Ser Gly Ser Ile Arg
140

<210> 396
<211> 2639
<212> DNA
<213> Homo sapiens

<400> 396
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accttcggcc ttttcgacag cttcagcctg actcgggtgg attgtagcgg 200
cctgggcccc cacatcatgc cggtgcccat cctctctggac acagcccact 250
tggacctgtc ctccaaccgg ctggagatgg tgaatgagtc ggtgttggcg 300
gggcccgggt acacgacgtt ggctggcctg gatctcagcc acaacctgct 350
caccagcacc tcaaccactg cttctctccc ccttcgctac ctggagtcgc 400
ttgacctcag ccacaatggc ctgacagccc tgccagccga gagcttcacc 450
agctcaccac tgagcgacgt gaaccttagc cacaaccagc tccgggaggt 500
ctcagtgtct gccttcacga cgcacagtca gggccgggca ctacacgtgg 550
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ggcctgcctg cgcccacat tcagagcctg aacctggcct ggaaccggct 650

ccatgccgtg cccaacctcc gagacttgcc cctgcgctac ctgagcctgg 700
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gactctgggc ctctgaccag ctgtgcggca tgggctaagt cactctgccc 1950
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2639

<210> 397
<211> 353
<212> PRT
<213> Homo sapiens

<400> 397
Met Pro Trp Pro Leu Leu Leu Leu Ala Val Ser Gly Ala Gln
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Thr Thr Arg Pro Cys Phe Pro Gly Cys Gln Cys Glu Val Glu Thr
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Phe Gly Leu Phe Asp Ser Phe Ser Leu Thr Arg Val Asp Cys Ser
35 40 45
Gly Leu Gly Pro His Ile Met Pro Val Pro Ile Pro Leu Asp Thr
50 55 60
Ala His Leu Asp Leu Ser Ser Asn Arg Leu Glu Met Val Asn Glu
65 70 75
Ser Val Leu Ala Gly Pro Gly Tyr Thr Thr Leu Ala Gly Leu Asp
80 85 90
Leu Ser His Asn Leu Leu Thr Ser Ile Ser Pro Thr Ala Phe Ser
95 100 105
Arg Leu Arg Tyr Leu Glu Ser Leu Asp Leu Ser His Asn Gly Leu
110 115 120
Thr Ala Leu Pro Ala Glu Ser Phe Thr Ser Ser Pro Leu Ser Asp
125 130 135
Val Asn Leu Ser His Asn Gln Leu Arg Glu Val Ser Val Ser Ala
140 145 150

Phe Thr Thr His Ser Gln Gly Arg Ala Leu His Val Asp Leu Ser
155 160 165

His Asn Leu Ile His Arg Leu Val Pro His Pro Thr Arg Ala Gly
170 175 180

Leu Pro Ala Pro Thr Ile Gln Ser Leu Asn Leu Ala Trp Asn Arg
185 190 195

Leu His Ala Val Pro Asn Leu Arg Asp Leu Pro Leu Arg Tyr Leu
200 205 210

Ser Leu Asp Gly Asn Pro Leu Ala Val Ile Gly Pro Gly Ala Phe
215 220 225

Ala Gly Leu Gly Gly Leu Thr His Leu Ser Leu Ala Ser Leu Gln
230 235 240

Arg Leu Pro Glu Leu Ala Pro Ser Gly Phe Arg Glu Leu Pro Gly
245 250 255

Leu Gln Val Leu Asp Leu Ser Gly Asn Pro Lys Leu Asn Trp Ala
260 265 270

Gly Ala Glu Val Phe Ser Gly Leu Ser Ser Leu Gln Glu Leu Asp
275 280 285

Leu Ser Gly Thr Asn Leu Val Pro Leu Pro Glu Ala Leu Leu Leu
290 295 300

His Leu Pro Ala Leu Gln Ser Val Ser Val Gly Gln Asp Val Arg
305 310 315

Cys Arg Arg Leu Val Arg Glu Gly Thr Tyr Pro Arg Arg Pro Gly
320 325 330

Ser Ser Pro Lys Val Pro Leu His Cys Val Asp Thr Arg Glu Ser
335 340 345

Ala Ala Arg Gly Pro Thr Ile Leu
350

<210> 398
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 398
ccctgccagc cgagagcttc acc 23

<210> 399
<211> 23
<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-23

<223> Synthetic construct.

<400> 399

ggttggtgcc cgaaaggtcc agc 23

<210> 400

<211> 44

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-44

<223> Synthetic construct.

<400> 400

caaccccaag cttaactggg caggagctga ggtgttttca ggcc 44

<210> 401

<211> 1571

<212> DNA

<213> Homo sapiens

<400> 401

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gtgggtctga ggggaccaga agggtagact acgttggctt tctggaagg 100

gaggctatat gcgtcaattc cccaaaacaa gttttgacat tcccctgaa 150

atgtcattct ctatctattc actgcaagtg cctgctgttc caggccttac 200

ctgctgggca ctaacggcgg agccaggatg gggacagaat aaaggagcca 250

cgacctgtgc caccaactcg cactcagact ctgaactcag acctgaaatc 300

ttctcttcac gggaggcttg gcagtttttc ttactcctgt ggtctccaga 350

tttcaggcct aagatgaaag cctctagtct tgccttcagc cttctctctg 400

ctgcgtttta tctcctatgg actccttcca ctggactgaa gacactcaat 450

ttgggaagct gtgtgatcgc cacaaacctt caggaaatac gaaatggatt 500

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gaatcttaag gaggactgag tctttgcaag acacaaagcc tgcgaatcga 600

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ccaattcctt tcttaccatc aagaaggacc tccggctctc tcatgccac 750

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tgtggaataa gttttgatgt ggaattgcac atctacctta caattactga 1450
ccatccccag tagactcccc agtcccataa ttgtgtatct tccagccagg 1500
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ccaaaaaaaa aaaaaaaaaa a 1571

<210> 402
<211> 261
<212> PRT
<213> Homo sapiens

<400> 402
Met Arg Gln Phe Pro Lys Thr Ser Phe Asp Ile Ser Pro Glu Met
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Ser Phe Ser Ile Tyr Ser Leu Gln Val Pro Ala Val Pro Gly Leu
20 25 30
Thr Cys Trp Ala Leu Thr Ala Glu Pro Gly Trp Gly Gln Asn Lys
35 40 45
Gly Ala Thr Thr Cys Ala Thr Asn Ser His Ser Asp Ser Glu Leu
50 55 60
Arg Pro Glu Ile Phe Ser Ser Arg Glu Ala Trp Gln Phe Phe Leu
65 70 75
Leu Leu Trp Ser Pro Asp Phe Arg Pro Lys Met Lys Ala Ser Ser
80 85 90

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Ala | Phe | Ser | Leu | Leu | Ser | Ala | Ala | Phe | Tyr | Leu | Leu | Trp | Thr | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Pro | Ser | Thr | Gly | Leu | Lys | Thr | Leu | Asn | Leu | Gly | Ser | Cys | Val | Ile | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ala | Thr | Asn | Leu | Gln | Glu | Ile | Arg | Asn | Gly | Phe | Ser | Glu | Ile | Arg | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gly | Ser | Val | Gln | Ala | Lys | Asp | Gly | Asn | Ile | Asp | Ile | Arg | Ile | Leu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Arg | Arg | Thr | Glu | Ser | Leu | Gln | Asp | Thr | Lys | Pro | Ala | Asn | Arg | Cys | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Cys | Leu | Leu | Arg | His | Leu | Leu | Arg | Leu | Tyr | Leu | Asp | Arg | Val | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Lys | Asn | Tyr | Gln | Thr | Pro | Asp | His | Tyr | Thr | Leu | Arg | Lys | Ile | Ser | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | Leu | Ala | Asn | Ser | Phe | Leu | Thr | Ile | Lys | Lys | Asp | Leu | Arg | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ser | His | Ala | His | Met | Thr | Cys | His | Cys | Gly | Glu | Glu | Ala | Met | Lys | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Lys | Tyr | Ser | Gln | Ile | Leu | Ser | His | Phe | Glu | Lys | Leu | Glu | Pro | Gln | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ala | Ala | Val | Val | Lys | Ala | Leu | Gly | Glu | Leu | Asp | Ile | Leu | Leu | Gln | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Trp | Met | Glu | Glu | Thr | Glu | | | | | | | | | | |
| | | | | 260 | | | | | | | | | | | |

<210> 403
 <211> 28
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-28
 <223> Synthetic construct.

<400> 403
 ctcctgtggt ctccagattt caggccta 28

<210> 404
 <211> 26
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-26
 <223> Synthetic construct.

<400> 404
agtcctcctt aagattctga tgtcaa 26

<210> 405
<211> 998
<212> DNA
<213> Homo sapiens

<400> 405
ccgttatcgt cttgcgctac tgctgaatgt ccgtcccgga ggaggaggag 50
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gtccggctgc gcggctaccg tggccgagct agcaaccttt cccctggatc 150
tcacaaaaac tcgactccaa atgcaaggag aagcagctct tgctcggttg 200
ggagacggtg caagagaatc tgccccctat aggggaatgg tgcgcacagc 250
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caccgcgccat ttacagacac gtagtgtatt ctggagggtcg aatggtcaca 350
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tccccttttg aaatcagtca ttggagggat gatggctggt gttattggcc 450
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<210> 406
<211> 323
<212> PRT
<213> Homo sapiens

<400> 406
Met Ser Val Pro Glu Glu Glu Arg Leu Leu Pro Leu Thr Gln
1 5 10 15

[illegible]

305

310

315

Glu Met Ser Gly Val Ser Pro Phe
320

<210> 407
<211> 31
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-31
<223> Synthetic construct.

<400> 407
cgcgatccc gttatcgctt tgcgctactg c 31

<210> 408
<211> 34
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-34
<223> Synthetic construct.

<400> 408
gcggaattct taaaatggac tgactccact catc 34

<210> 409
<211> 1487
<212> DNA
<213> Homo sapiens

<400> 409
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cagcatttaa tgaaaaattt atgcttaaga agtaaaaatg gcaggcttcc 150
tagataattt tcgttggcca gaatgtgaat gtattgactg gaggtagaga 200
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ttaaaaagaa ttctctaat atgactttat gtgagaa 1487

<210> 410
<211> 158
<212> PRT
<213> Homo sapiens

<400> 410
Met Ala Gly Phe Leu Asp Asn Phe Arg Trp Pro Glu Cys Glu Cys
1 5 10 15
Ile Asp Trp Ser Glu Arg Arg Asn Ala Val Ala Ser Val Val Ala
20 25 30
Gly Ile Leu Phe Phe Thr Gly Trp Trp Ile Met Ile Asp Ala Ala
35 40 45
Val Val Tyr Pro Lys Pro Glu Gln Leu Asn His Ala Phe His Thr
50 55 60
Cys Gly Val Phe Ser Thr Leu Ala Phe Phe Met Ile Asn Ala Val
65 70 75

Ser Asn Ala Gln Val Arg Gly Asp Ser Tyr Glu Ser Gly Cys Leu
80 85 90

Gly Arg Thr Gly Ala Arg Val Trp Leu Phe Ile Gly Phe Met Leu
95 100 105

Met Phe Gly Ser Leu Ile Ala Ser Met Trp Ile Leu Phe Gly Ala
110 115 120

Tyr Val Thr Gln Asn Thr Asp Val Tyr Pro Gly Leu Ala Val Phe
125 130 135

Phe Gln Asn Ala Leu Ile Phe Phe Ser Thr Leu Ile Tyr Lys Phe
140 145 150

Gly Arg Thr Glu Glu Leu Trp Thr
155

<210> 411
<211> 20
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-20
<223> Synthetic construct.

<400> 411
gtttgaggaa gctgggatac 20

<210> 412
<211> 20
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-20
<223> Synthetic construct.

<400> 412
ccaaactcga gcacctgttc 20

<210> 413
<211> 40
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-40
<223> Synthetic construct.

<400> 413
atggcaggct tcctagataa ttttcgttgg ccagaatgtg 40

<210> 414

<211> 1337

<212> DNA

<213> Homo sapiens

<400> 414

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gaaattcctt aaagaaattc cggggggtgc actggtgctg gtggcctcct 750
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tatttttgct ggttttgaaa aaaaaaaaaa aaaaaaa 1337

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<210> 415
<211> 224
<212> PRT
<213> Homo sapiens
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Met Arg Val Ser Gly Val Leu Arg Leu Leu Ala Leu Ile Phe Ala
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Ile Val Thr Thr Trp Met Phe Ile Arg Ser Tyr Met Ser Phe Ser
20 25 30

Met Lys Thr Ile Arg Leu Pro Arg Trp Leu Ala Ala Ser Pro Thr
35 40 45

Lys Glu Ile Gln Val Lys Lys Tyr Lys Cys Gly Leu Ile Lys Pro
50 55 60

Cys Pro Ala Asn Tyr Phe Ala Phe Lys Ile Cys Ser Gly Ala Ala
65 70 75

Asn Val Val Gly Pro Thr Met Cys Phe Glu Asp Arg Met Ile Met
80 85 90

Ser Pro Val Lys Asn Asn Val Gly Arg Gly Leu Asn Ile Ala Leu
95 100 105

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asn | Gly | Thr | Thr | Gly | Ala | Val | Leu | Gly | Gln | Lys | Ala | Phe | Asp |
| | | | | 110 | | | | | 115 | | | | | 120 |

Met Tyr Ser Gly Asp Val Met His Leu Val Lys Phe Leu Lys Glu
125 130 135

Ile Pro Gly Gly Ala Leu Val Leu Val Ala Ser Tyr Asp Asp Pro
140 145 150

Gly Thr Lys Met Asn Asp Glu Ser Arg Lys Leu Phe Ser Asp Leu
155 160 165

Gly Ser Ser Tyr Ala Lys Gln Leu Gly Phe Arg Asp Ser Trp Val
170 175 180

Phe Ile Gly Ala Lys Asp Leu Arg Gly Lys Ser Pro Phe Glu Gln
185 190 195

Phe Leu Lys Asn Ser Pro Asp Thr Asn Lys Tyr Glu Gly Trp Pro
200 205 210

Glu Leu Leu Glu Met Glu Gly Cys Met Pro Pro Lys Pro Phe
215 220

```
<210> 416
<211> 21
<212> DNA
<213> Artificial
```

<220>
<221> Artificial Sequence

<222> 1-21
<223> Synthetic construct.

```
<400> 416
gccatagtca cgacatggat g 21
```

```
<210> 417
<211> 18
<212> DNA
<213> Artificial
```

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

```
<400> 417
  ggatggccag agctgctg 18
```

```
<210> 418
<211> 26
<212> DNA
<213> Artificial
```

<220>
<221> Artificial Sequence
<222> 1-26
<223> Synthetic construct.

```
<400> 418
aaagtacaag tgtggcctca tcaagc 26
```

```
<210> 419
<211> 24
<212> DNA
<213> Artificial
```

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

```
<400> 419
tctgactcct aagtcaggca ggag 24
```

```
<210> 420
<211> 24
<212> DNA
<213> Artificial
```

```
<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.
```

```
<400> 420
attctctcca cagacagctg gttc 24
```

<210> 421
 <211> 46
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-46
 <223> Synthetic construct.

<400> 421
 gtacaagtgt ggcctcatca agccctgccc agccaactac tttgcg 46

<210> 422
 <211> 1701
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 1528
 <223> unknown base

<400> 422
 gagactgcag agggagataa agagagaggg caaagaggca gcaagagatt 50
 tgtcctgggg atccagaaac ccatgatacc ctactgaaca ccgaatcccc 100
 tggaagccca cagagacaga gacagcaaga gaagcagaga taaatacact 150
 cagccagga gctcgctcgc tctctctctc tctctctcac tcctccctcc 200
 ctctctctct gcctgtccta gtcctctagt cctcaaattc ccagtccctc 250
 gcaccccttc ctgggacact atgttgttct ccgccctcct gctggagggtg 300
 atttgatcc tggctgcaga tgggggtcaa cactggacgt atgagggcc 350
 acatggtcag gaccattggc cagcctctta ccctgagtgt ggaaacaatg 400
 ccagtcgcc catcgatatt cagacagaca gtgtgacatt tgaccctgat 450
 ttgcctgctc tgcagcccca cggatatgac cagcctggca ccgagccttt 500
 ggacctgcac aacaatggcc acacagtgc aactctctctg ccctctaccc 550
 tgtatctggg tggacttccc cgaaaatatg tagctgcca gctccacctg 600
 cactgggggtc agaaaggatc ccagggggg tcagaacacc agatcaacag 650
 tgaagccaca tttgcagagc tccacattgt acattatgac tctgattcct 700
 atgacagctt gagtggaggt gctgagaggg ctcagggcct ggctgtcctg 750
 ggcatcctaa ttgaggtggg tgagactaag aatatagctt atgaacacat 800
 tctgagtcac ttgcatgaag tcaggcataa agatcagaag acctcagtgc 850

ctcccttcaa cctaagagag ctgctcccca aacagctggg gcagtacttc 900
cgctacaatg gctcgctcac aactccccct tgctaccaga gtgtgctctg 950
gacagttttt tatagaaggt cccagatttc aatggaacag ctggaaaagc 1000
ttcagggggac attgtttctcc acagaagagg agccctctaa gcttctggta 1050
cagaactacc gagcccttca gcctctcaat cagcgcatgg tctttgcttc 1100
tttcatccaa gcaggatcct cgtataccac aggtgaaatg ctgagtctag 1150
gtgtaggaat cttggttggc tgtctctgcc ttctcctggc tgtttatttc 1200
attgctagaa agattcgga gaagaggctg gaaaaccgaa agagtgtggt 1250
cttcacctca gcacaagcca cgactgaggc ataaattcct tctcagatac 1300
catggatgtg gatgacttcc cttcatgcct atcaggaagc ctctaaaatg 1350
gggtgtagga tctggccaga aacactgtag gagtagtaag cagatgtcct 1400
ccttccccctg gacatctctt agagaggaat ggaccaggc tgtcattcca 1450
ggaagaactg cagagccttc agcctctcca aacatgtagg aggaaatgag 1500
gaaatcgctg tggtgttaat gcagaganca aactctgttt agttgcaggg 1550
gaagtttggg atatacccca aagtcctcta cccctcact tttatggccc 1600
tttccttaga tatactgagg gatctctcct taggataaag agttgctgtt 1650
gaagttgtat atttttgatc aatatatttg gaaattaaag tttctgaatt 1700
t 1701

<210> 423
<211> 337
<212> PRT
<213> Homo sapiens

<400> 423
Met Leu Phe Ser Ala Leu Leu Leu Glu Val Ile Trp Ile Leu Ala
1 5 10 15
Ala Asp Gly Gly Gln His Trp Thr Tyr Glu Gly Pro His Gly Gln
20 25 30
Asp His Trp Pro Ala Ser Tyr Pro Glu Cys Gly Asn Asn Ala Gln
35 40 45
Ser Pro Ile Asp Ile Gln Thr Asp Ser Val Thr Phe Asp Pro Asp
50 55 60
Leu Pro Ala Leu Gln Pro His Gly Tyr Asp Gln Pro Gly Thr Glu
65 70 75
Pro Leu Asp Leu His Asn Asn Gly His Thr Val Gln Leu Ser Leu

| 80 | | | | | 85 | | | | | 90 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ser | Thr | Leu | Tyr | Leu | Gly | Gly | Leu | Pro | Arg | Lys | Tyr | Val | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | Gln | Leu | His | Leu | His | Trp | Gly | Gln | Lys | Gly | Ser | Pro | Gly | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Glu | His | Gln | Ile | Asn | Ser | Glu | Ala | Thr | Phe | Ala | Glu | Leu | His |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ile | Val | His | Tyr | Asp | Ser | Asp | Ser | Tyr | Asp | Ser | Leu | Ser | Glu | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ala | Glu | Arg | Pro | Gln | Gly | Leu | Ala | Val | Leu | Gly | Ile | Leu | Ile | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Val | Gly | Glu | Thr | Lys | Asn | Ile | Ala | Tyr | Glu | His | Ile | Leu | Ser | His |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | His | Glu | Val | Arg | His | Lys | Asp | Gln | Lys | Thr | Ser | Val | Pro | Pro |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Phe | Asn | Leu | Arg | Glu | Leu | Leu | Pro | Lys | Gln | Leu | Gly | Gln | Tyr | Phe |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Arg | Tyr | Asn | Gly | Ser | Leu | Thr | Thr | Pro | Pro | Cys | Tyr | Gln | Ser | Val |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Trp | Thr | Val | Phe | Tyr | Arg | Arg | Ser | Gln | Ile | Ser | Met | Glu | Gln |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | Glu | Lys | Leu | Gln | Gly | Thr | Leu | Phe | Ser | Thr | Glu | Glu | Glu | Pro |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ser | Lys | Leu | Leu | Val | Gln | Asn | Tyr | Arg | Ala | Leu | Gln | Pro | Leu | Asn |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Gln | Arg | Met | Val | Phe | Ala | Ser | Phe | Ile | Gln | Ala | Gly | Ser | Ser | Tyr |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Thr | Thr | Gly | Glu | Met | Leu | Ser | Leu | Gly | Val | Gly | Ile | Leu | Val | Gly |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Cys | Leu | Cys | Leu | Leu | Leu | Ala | Val | Tyr | Phe | Ile | Ala | Arg | Lys | Ile |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Arg | Lys | Lys | Arg | Leu | Glu | Asn | Arg | Lys | Ser | Val | Val | Phe | Thr | Ser |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Ala | Gln | Ala | Thr | Thr | Glu | Ala | | | | | | | | |
| | | | | 335 | | | | | | | | | | |

<210> 424
 <211> 18
 <212> DNA
 <213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 424
gtaaagtcgc tggccagc 18

<210> 425
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 425
cccgatctgc ctgctgta 18

<210> 426
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 426
ctgcactgta tggccattat tgtg 24

<210> 427
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 427
cagaaacca tgatacccta ctgaacaccg aatcccctgg aagcc 45

<210> 428
<211> 1073
<212> DNA
<213> Homo sapiens

<400> 428
aatttttcac cagagtaaac ttgagaaacc aactggacct tgagtattgt 50
acattttgcc tcgtggaccc aaaggtagca atctgaaaca tgaggagtac 100
gattctactg ttttgtcttc taggatcaac tcggtcatta ccacagctca 150

aacctgcttt gggactccct cccacaaaac tggctccgga tcagggaaca 200
 ctaccaaacc aacagcagtc aaatcagggtc tttccttctt taagtctgat 250
 accattaaca cagatgctca cactggggcc agatctgcat ctgttaaadc 300
 ctgctgcagg aatgacacct ggtaccaga cccaccatt gaccctggga 350
 gggttgaatg tacaacagca actgcacca catgtgttac caatttttgt 400
 cacacaactt ggagcccagg gcactatcct aagctcagag gaattgccac 450
 aaatcttcac gagcctcatc atccattcct tgttcccgga aggcacctg 500
 cccaccagtc aggcaggggc taatccagat gtccaggatg gaagccttcc 550
 agcaggagga gcagggtgaa atcctgccac ccagggaacc ccagcaggcc 600
 gcctccaac tcccagtggc acagatgacg actttgcagt gaccaccct 650
 gcaggcatcc aaaggagcac acatgccatc gaggaagcca ccacagaatc 700
 agcaaagga attcagtaag ctgtttcaaa ttttttcaac taagctgcct 750
 cgaatttggt gatacatgtg aatctttatc attgattata ttatggaata 800
 gattgagaca cattggatag tcttagaaga aattaattct taattttac 850
 gaaaatattc ttgaaatttc agaaaatatg ttctatgtag agaatcccaa 900
 cttttaaaaa caataattca atggataaat ctgtctttga aatataacat 950
 tatgctgcct ggatgatatg catattaaaa catatttgga aaactggaaa 1000
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1050
 aaaaaaaaaa aaaaaaaaaa aaa 1073

<210> 429
 <211> 209
 <212> PRT
 <213> Homo sapiens

<400> 429
 Met Arg Ser Thr Ile Leu Leu Phe Cys Leu Leu Gly Ser Thr Arg
 1 5 10 15
 Ser Leu Pro Gln Leu Lys Pro Ala Leu Gly Leu Pro Pro Thr Lys
 20 25 30
 Leu Ala Pro Asp Gln Gly Thr Leu Pro Asn Gln Gln Gln Ser Asn
 35 40 45
 Gln Val Phe Pro Ser Leu Ser Leu Ile Pro Leu Thr Gln Met Leu
 50 55 60
 Thr Leu Gly Pro Asp Leu His Leu Leu Asn Pro Ala Ala Gly Met
 65 70 75

Thr Pro Gly Thr Gln Thr His Pro Leu Thr Leu Gly Gly Leu Asn
80 85 90
Val Gln Gln Gln Leu His Pro His Val Leu Pro Ile Phe Val Thr
95 100 105
Gln Leu Gly Ala Gln Gly Thr Ile Leu Ser Ser Glu Glu Leu Pro
110 115 120
Gln Ile Phe Thr Ser Leu Ile Ile His Ser Leu Phe Pro Gly Gly
125 130 135
Ile Leu Pro Thr Ser Gln Ala Gly Ala Asn Pro Asp Val Gln Asp
140 145 150
Gly Ser Leu Pro Ala Gly Gly Ala Gly Val Asn Pro Ala Thr Gln
155 160 165
Gly Thr Pro Ala Gly Arg Leu Pro Thr Pro Ser Gly Thr Asp Asp
170 175 180
Asp Phe Ala Val Thr Thr Pro Ala Gly Ile Gln Arg Ser Thr His
185 190 195
Ala Ile Glu Glu Ala Thr Thr Glu Ser Ala Asn Gly Ile Gln
200 205

<210> 430
<211> 1257
<212> DNA
<213> Homo Sapien

<400> 430
ggagagagggc gcgcgggtga aaggcgcatg gatgcagcct gcggcggcct 50
cggagcgcg cgagagccaga cgctgaccac gttcctctcc tcgggtctct 100
ccgctccag ctccgcgctg cccggcagcc gggagccatg cgaccccagg 150
gccccgccgc ctccccgcag cggtccgcg gcctcctgct gctcctgctg 200
ctgcagctgc ccgcgccgtc gagcgccctct gagatcccca aggggaagca 250
aaaggcgag ctccggcaga gggaggtggt ggacctgtat aatggaatgt 300
gcttacaagg gccagcagga gtgcctggtc gagacgggag ccctggggcc 350
aatgttattc cgggtacacc tgggatccca ggtcgggatg gattcaaagg 400
agaaaagggg gaatgtctga gggaaagctt tgaggagtcc tggacacca 450
actacaagca gtgttcattg agttcattga attatggcat agatcttggg 500
aaaattgcgg agtgtacatt tacaagatg cgttcaaata gtgctctaag 550
agttttgttc agtggctcac ttcggctaaa atgcagaaat gcatgctgtc 600
agcgttggtg tttcacattc aatggagctg aatgttcagg acctcttccc 650

attgaagcta taatttattt ggaccaagga agccctgaaa tgaattcaac 700
aattaatatt catcgcaactt cttctgtgga aggactttgt gaaggaattg 750
gtgctggatt agtggatggt gctatctggg ttggcacttg ttcagattac 800
ccaaaaggag atgcttctac tggatggaat tcagtttctc gcatcattat 850
tgaagaacta ccaaaataaa tgctttaatt ttcatttgct acctcttttt 900
ttattatgcc ttggaatggt tcacttaaat gacattttta ataagtttat 950
gtatacatct gaatgaaaag caaagctaaa tatgtttaca gaccaaagtg 1000
tgatttcaca ctgtttttta atctagcatt attcattttg cttcaatcaa 1050
aagtggtttc aatatttttt ttagttgggt agaatacttt cttcatagtc 1100
acattctctc aacctataat ttggaatatt gttgtggtct tttgtttttt 1150
ctcttagtat agcattttta aaaaaatata aaagctacca atctttgtac 1200
aatttgtaaa tgtaagaat tttttttata tctgttaa ataaaaattatt 1250
tccaaca 1257

<210> 431
<211> 243
<212> PRT
<213> Homo Sapien

<400> 431
Met Arg Pro Gln Gly Pro Ala Ala Ser Pro Gln Arg Leu Arg Gly
1 5 10 15
Leu Leu Leu Leu Leu Leu Leu Gln Leu Pro Ala Pro Ser Ser Ala
20 25 30
Ser Glu Ile Pro Lys Gly Lys Gln Lys Ala Gln Leu Arg Gln Arg
35 40 45
Glu Val Val Asp Leu Tyr Asn Gly Met Cys Leu Gln Gly Pro Ala
50 55 60
Gly Val Pro Gly Arg Asp Gly Ser Pro Gly Ala Asn Val Ile Pro
65 70 75
Gly Thr Pro Gly Ile Pro Gly Arg Asp Gly Phe Lys Gly Glu Lys
80 85 90
Gly Glu Cys Leu Arg Glu Ser Phe Glu Glu Ser Trp Thr Pro Asn
95 100 105
Tyr Lys Gln Cys Ser Trp Ser Ser Leu Asn Tyr Gly Ile Asp Leu
110 115 120
Gly Lys Ile Ala Glu Cys Thr Phe Thr Lys Met Arg Ser Asn Ser
125 130 135

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| Ala | Leu | Arg | Val | Leu 140 | Phe | Ser | Gly | Ser | Leu 145 | Arg | Leu | Lys | Cys | Arg 150 |
| Asn | Ala | Cys | Cys | Gln 155 | Arg | Trp | Tyr | Phe | Thr 160 | Phe | Asn | Gly | Ala | Glu 165 |
| Cys | Ser | Gly | Pro | Leu 170 | Pro | Ile | Glu | Ala | Ile 175 | Ile | Tyr | Leu | Asp | Gln 180 |
| Gly | Ser | Pro | Glu | Met 185 | Asn | Ser | Thr | Ile | Asn 190 | Ile | His | Arg | Thr | Ser 195 |
| Ser | Val | Glu | Gly | Leu 200 | Cys | Glu | Gly | Ile | Gly 205 | Ala | Gly | Leu | Val | Asp 210 |
| Val | Ala | Ile | Trp | Val 215 | Gly | Thr | Cys | Ser | Asp 220 | Tyr | Pro | Lys | Gly | Asp 225 |
| Ala | Ser | Thr | Gly | Trp 230 | Asn | Ser | Val | Ser | Arg 235 | Ile | Ile | Ile | Glu | Glu 240 |

Leu Pro Lys

```
<210> 432
<211> 18
<212> DNA
<213> Artificial Sequence
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<220>
<223> Artificial Sequence

```
<400> 432
aggacttgcc ctcaggaa 18
```

```
<210> 433
<211> 21
<212> DNA
<213> Artificial Sequence
```

<220>
<223> Synthetic oligonucleotide probe

```
<400> 433
cgcaggacag ttgtgaaaat a 21
```

```
<210> 434
<211> 21
<212> DNA
<213> Artificial Sequence
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<220>
<223> Synthetic oligonucleotide probe

<400> 434
atgacgctcg tccaaggcca c 21

<210> 435

[illegible]

<220>
<223> Synthetic oligonucleotide probe

<400> 440
gggtcgtgtt ttggagaga 19

<210> 441
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 441
ctggccctca gagcaccaat 20

<210> 442
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 442
tcctccatca cttcccctag ctcca 25

<210> 443
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 443
ctggcaggag ttaaagttcc aaga 24

<210> 444
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 444
aaaggacacc gggatgtg 18

<210> 445
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

```

<400> 445
  agcgtacact ctctccaggc aaccag 26

<210> 446
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 446
  caattctgga tgagggtggta ga 22

<210> 447
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 447
  caggactgag cgcttgttta 20

<210> 448
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 448
  caaagcgcca agtaccggac c 21

<210> 449
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 449
  ccagacctca gccaggaa 18

<210> 450
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 450
  ccctagctga ccccttca 18

```

<210> 451
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 451
tctgacaagc agttttctga atc 23

<210> 452
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 452
ctctccccct cccttttctt ttgttt 26

<210> 453
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 453
ctctggtgcc cacagtga 18

<210> 454
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 454
ccatgcctgc tcagccaaga a 21

<210> 455
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 455
caggaaatct ggaaacctac agt 23

<210> 456
<211> 20
<212> DNA

<223> Synthetic oligonucleotide probe
 <400> 461
 tggacacgtg gcagtgga 18
 <210> 462
 <211> 19
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 462
 tcatgggtctc gtcccatc 19
 <210> 463
 <211> 27
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 463
 caccatttgt ttctctgtct ccccatc 27
 <210> 464
 <211> 18
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 464
 ccggcatcct tggagtag 18
 <210> 465
 <211> 20
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 465
 tccccattag cacaggagta 20
 <210> 466
 <211> 23
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 466

aggctcttgc ctgtcctgct gct 23

<210> 467

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 467

gcccagagtc ccacttgt 18

<210> 468

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 468

actgctccgc ctactacga 19

<210> 469

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 469

aggcatcctc gccgtcctca 20

<210> 470

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 470

aaggccaagg tgagtccat 19

<210> 471

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 471

cgagtgtgtg cgaaacctaa 20

<210> 472

<211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 472
 tcagggtcta catcagcctc ctgc 24

 <210> 473
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 473
 aaggccaagg tgagtccat 19

 <210> 474
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 474
 cctactgagg agccctatgc 20

 <210> 475
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 475
 tccaggtgga ccccaattca gg 22

 <210> 476
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 476
 gggaggctta taggccaat ctgg 24

 <210> 477
 <211> 50
 <212> DNA
 <213> Artificial Sequence

[illegible]

▼



ggcttcagca gcacgtgtga agtcgaagtc gcagtcacag atatcaatga 50